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Editorial

'Business Studies', the refereed journal of the Commerce Department, Calcutta University, presents both descriptive and empirical articles in the field of finance, economics, accounting and management within the periphery of commerce and business. Accordingly, this combined 33rd and 34th volume of *Business Studies* puts forth before the readers twelve insightful papers on diverse micro and macro issues such as performance management, intricacies of share and derivatives markets, growth, poverty and consumption pattern in India, role of specific institutions like self-help groups and micro, small and medium enterprises and relationship between role overload and family conflict. The papers have been arranged in view of the perceived link in their contents so as to retain the universal appeal of the research volume. The first paper reviews existing literature to discuss the conceptual aspects of performance management system and its linkage with human resource systems. Some pertinent issues in the area of finance are covered from second to fifth articles. The second paper follows an unconventional route by using non-price variables like open interest and trading volume based predictors to examine empirically the information content of options market in predicting future prices in underlying cash market. In a thought provoking discussion, the third paper portrays the transformation of subprime crisis into a global financial crisis and deals with issues relating to securitisation in India. The fourth paper provides an insight into intrinsic value of a share. The fifth paper empirically examines the association between mutual fund investments and stock returns in Indian context. The sixth paper focuses our attention to a macro-economic issue of per-capita real income growth and behavior of income poverty across states of India through an empirical analysis. In continuation of poverty alleviation, particularly in rural West Bengal, the seventh paper empirically examines the role played by self help groups. The eighth paper again reorients us to an Indian economic issue by evaluating the nature and pattern of inter-state disparity in the consumption pattern of the major states of India. The ninth paper addresses a crucial social issue of role overload and role conflict in family decision making by surveying housewives and working wives in Kolkata. There is no doubting the fact that micro, small and medium enterprises (MSMEs) are now playing a major role in fostering economic growth of India. In this context, the tenth paper analyses the problems and prospects of MSMEs in India in a theoretical discussion. The eleventh paper evaluates the impact of training and development programmes on public and private sector bank employees in this globalization era. Finally, the twelfth paper analyses the problems faced by coir industry in the state of West Bengal.

We sincerely hope that all the articles published in this edition of the Departmental journal will be of keen interest to our valued readers, and will enrich their knowledge base and stimulate their intellect. We would also encourage you to participate in the ongoing debate on the above and other related research themes in the field of accounting, finance, economics and management by contributing your research work to this journal.

Tanupa Chakraborty
Associate Editor

BUSINESS STUDIES

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Performance Management System: A Conceptual Framework

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Abstract: In this paper an attempt has been made to provide a conceptual framework through reviewing the relevant literature with reference to Performance Management System (PMS)—its genesis and process; its linkage with Human Resource Systems, the impact it has in the business arena as well as the modern trends in PMS. Attempt has also been made to touch upon the, how-so-ever limited, literature in this field focusing on the Indian scenario.

Key-words: Performance appraisal, management target setting, HRD rewards.

1. Introduction

The process of globalisation and liberalization ushered in a new world leading to an 'unequal competition' between 'giant MNCs' and Indian enterprises fuelled by the former's technological advancement and reduction in labour force. To remain competitive, restructuring and downsizing had become the buzzwords in the corridors of the Indian firms. Challenges of developing and managing human performance assumed great importance to achieve competitive advantage. It had become increasingly clear that sustained effectiveness of organisations depended in large measures on their ability to manage performance and develop capacities of their human resources to take on the challenges brought about by the new economic environment. *Mendonca and Kanungo (1990)* stressed that a country's development hinges on organisations' effective management of their human resources. This highlights the managers' responsibility to manage the performance of their subordinates, consistent with the job objectives and the overall goals of the organisation. Therefore, Performance Management (PM) is considered as an opportunity for managers and their subordinates to be engaged in a partnership of purpose, direction and effort as they strive to fulfil both personal and organisational objectives. In a study conducted by *Logenecker and Fink (1999)*, the practice of employing a value-added performance evaluation process was cited as one of the top ten vehicles for creating competitive advantage.

2. Methodology

The study is based on *secondary* data only.

The secondary data regarding the topic has been collected after intensive reading of published

literature on the subject–both from e-journals available on the internet through various search engines and also from reputed journals and books.

3. Performance Management system (PMS) : The Genesis

The genesis of reviewing performance is traced back to AD 221-265 in the Wei dynasty of China who had an 'Imperial rater' to evaluate the performance of the official family *(Koontz 1971)*. The first formal monitoring system evolved out of the work of Fredrick Taylor before World War I followed by rating of officers in the armed forces of US in 1920s. 1950s saw the advent of merit rating that was later rechristened *Performance Appraisal*. 1960s to 1970s saw the coming of *Management by Objectives (MBO), Critical Incident Technique and Behaviorally Anchored Rating Scales (BARS). Bernardin and Klatt (1985)* noted that small firms tended to rely heavily on trait-based approaches, while larger firms relied on a combination of trait, behavioral, and results-based techniques. In another study, *Locher and Teel (1988)* identified graphic rating scales (57.1%), the open-ended essay (21.3%), and MBO (18.1%) as the most popular performance appraisal techniques. Unlike *Taylor and Zawacki (1984), Locher and Teel (1988)* identified a trend towards the use of MBO as a popular technique. *Coens and Jenkins (2000)* defined Performance Appraisal as "the process of evaluating or judging the way in which someone is functioning" and "the purpose of evaluating an employee must be useful and must have purpose". However, available literature has stressed on the fact that Performance Management "is *not* Performance Appraisal" *(Chaudhuri, 2002)*.

Performance Appraisal–A Criticism

Performance appraisals have not succeeded in India and the world over. A recent survey conducted in the US indicated that 80% of the organisations are dissatisfied with performance appraisals. In spite of this dissatisfaction, no organisation is willing to do away with them. Some organisations sought to modify the system of assessment and devised different formats for different occupations including use of quantitative measures. In spite of all efforts, disappointment is uniform across the population. *Deming (1982)* stated that performance appraisal system is devastating to individuals and destructive to organisations, appraisal rating system nourishes short-term performance, annihilates long-term planning, builds fear, demolishes team work, nourishes rivalry and politics. It leaves people bitter, crushed, bruised, battered, desolate, despondent, dejected, feeling inferior, some even depressed and unable to comprehend why they are inferior. *Coens and Jenkins (2000)* suggested that performance appraisals should be abolished and suggested alternatives such as coaching and feedback that makes a difference. *McGregor's (1957)* classic article gave the following breakdown that adequately covered the basic aims of Performance Appraisal.

1. Performance appraisal systems should generate information needed for short-and long-range administrative actions, such as salary decisions, promotions, and transfers (all short-range) or human resource planning and managerial succession (long-range).
2. Appraisal systems should let subordinates know where they stand, how well they are doing, and what changes in their behavior the superior wants.
3. Appraisal systems should provide a means for coaching and counselling subordinates in order to train and develop them to their full potential.

For an effective performance appraisal system to exist for any length of time, the organisational reward system must clearly tie subordinate development to positive outcomes for managers. *Nelson (1994)* stated, "Recognition of a job well done is the top motivator of employee performance". *McCarthy (2001)* promoted a program that stressed planned awards and employee recognition.

Regarding his experience of studying the Performance Appraisal system at L&T, *Rao (2004)* said, "Looking back, I now realize that we made one significant mistake and stuck with it for the last 30 years. This was to call the system a performance appraisal system and not a performance management system ... It is only in the last decade since the liberalization of the economy that we realized the big mistake we had been making all these years. ...The focus of the system is not on appraisal...(it) is on learning, development, and improvement. Hence, it should be called a performance development system. As development is too narrow and ...the term management includes development, it is now more appropriately referred to as performance management system."

The Work-Planning-and-Review method, developed by *Meyer et al (1965)* took care of the weaknesses of Performance Appraisal, by proposing

- More frequest discussion of performance and
- An emphais on mutual goal planning and problem solving, elimination of summary judgements and ratings and separate discussion of salary issues.

This emphasis on goal setting is considered to be the foundation of the development of PM concepts.

The term Performance Management System (PMS) was first used in 1976 by *Beer and Ruh* while referring to a system implemented by them at Corning Glass to "manage, measure, and improve the performance and potential for advancement". It included 3 sections:

1. An MBO segment which stressed planning and goal setting
2. A Performance Development and Review section for coaching the employees for effective performance and greater opportunity for promotion
3. Evaluation and Salary Review.

However, PMS did not become a recognized process until the latter half of 1980s.

Fletcher (1993) defined PMS as it being "associated with an approach to creating a shared vision of the purpose and aims of the organisation, helping each employee understand and recognize their part in contributing to them, and, in so doing, manage and enhance the performance of both individuals and the organisation". Earlier, *Brumbach (1988)* said that performance is achieved if it embraced both behavior and results. When one is managing the performance of teams and individuals, both inputs (behavior) and outputs (results) should be considered. Performance is about how things are done as well as what is done, covering competency levels and achievements as well as objective setting and review *(Hartle, 1995)*. *McConnell (2004)* stressed that Performance Management "is the art and science of dealing with employees in a manner intended to positively influence their thinking and behavior to achieve a desired level of performance. It is a vital management technique, which, when incorporated into a manager's everyday behavior, is invaluable in identifying, evaluating and correcting employee performance problems". *Mohrman and Mohrman*

(1995) emphasized the need "to tie all aspects of managing performance to business objectives and to regard the organisation as a nest of performing units." In other words, PMS is an integrated system of linking business objectives or goals with the Key Result Areas (KRAs) of managers. It strives to create a customer-serving, motivated, accountable, reliable, creative, dedicated, and happy workforce through a shared understanding of what is to be achieved and how it is to be achieved. In a nutshell, the goal of PMS is to help boost employee performance and, ultimately, the productivity of the business.

The PMS Process

Bredrup and Bredrup (1995) saw PM as comprising three main processes–planning, improving and reviewing. These three processes could be applicable at all levels–organisation, business unit, department, team, individual, etc. *(Mabey and Salaman, 1995). Ainsworth and Smith (1993)* proposed a three-step cycle-performance planning; assessment of performance; and corrective and adaptive mutual action via mutual feedback discussions. *Guinn (1987)* proposed a three-step process-planning, managing and appraising. *Torrington and Hall (1995)* have also suggested three stages-planning, supporting and reviewing performance. The common thread here is that the manager and managed should have a shared view of what is expected of the employee which may be achieved through involvement and participation of a direct kind. Supporting performance is seen as a responsibility of the line manager who also has a particular part to play in reviewing performance. *Hartle (1995)* developed the 'mixed model' which stressed on planning, managing, reviewing and rewarding. Most organisations follow this 4-stage model now-a-days, which can be further detailed as : Setting Individual Business Roles and relating them to the job objectives of work groups and business through Performance Planning, Performance Measurement and Review, Rewards and Performance Development *(Armstrong and Baron, 2007).*

4. PMS and its Linkage with HR Systems

Performance Management is an on-going process of identifying, measuring and developing human performance in organisations. The purpose is to measure progress, differentiate between levels of performance, pinpoint training needs, validate rewards and identify employees for promotion *(Grote, 1996). Rao and Pareek (1998)* reiterated that PMSs are linked with training, promotions, salary and reward, administration and research and OD (Organisation Development). It is linked with reward administration in order to reward consistent good performance. According to *Roberts (2001)*, PM involves the setting of corporate, departmental, team and individual objectives; performance appraisal systems; appropriate reward strategies and schemes; training and development strategies and plans; feedback, communication and coaching; individual career planning; mechanisms for monitoring the effectiveness of PMS and interventions and even culture management. Thus, PM involves day-to-day management, as well as the support and development of people.

It is necessary that HR policies directed at PM be supported by effective systems. Conventionally, performance appraisal is viewed as the only component of PM. Such an approach fails to support human performance, and rather ends up inhibiting it. PM requires an interactive combination of HR

sub-systems, viz., selection, evaluation, feedback, development, reward and exit. *Margrave and Gorden (2001)* noted that important components of an evaluation process are clearly identified performance standards, a definition of production, and quantifiable measurements. They stressed that a well-written job description should be the first consideration in developing the process. Also noted was the importance in recognizing individual differences in similar jobs and considering these differences in job descriptions and the evaluation instruments.

The PM perspective stresses on the need to align HRM practices in such a way that they maximize current as well as future employee performance, which in turn, is expected to affect organizational performance *(Den Hartog, et al, 1994)*. Various PM Models like *Becker, Huselid, Pickus and Spratt, 1997*; *Guest, 1997*; etc., have shown that HRM practices are typically expected to increase employees' organizational commitment and motivation, which in turn, affects employee performance and ultimately organizational performance.

5. Impact of PMS

A study on the impact and trend of PM has shown that it is an important business system; it makes a difference in organisational performance; approaches to PM are changing; and senior managers must be attentive to the PMSs in their organisations. *Lingle and Schiemann (1996)* concluded that measurement-managed companies—especially those that measure employee performance—outperform those that downplay measurement. Successful industry leaders simply do a better job than non-leaders at measuring their workforce, which, the study said, is where real change is won or lost. A study by *Hewitt Associates* (1994) titled *The Impact of Performance Management on Organisational Success* substantiated that PMSs can have a significant impact on financial performance and productivity. The productivity of each and every employee influences the success of the company as a whole. However, it is difficult to quantify the worth of each employee unless a relevant Key Performance Indicator (KPI) is used which is in accordance with the goals and objectives set by the company *(Alam and Kaushik, 2008)*. *Sacht (2002)* found that best practice organisations see PM as a dynamic, on-going process that helps them achieve business goals and helps individuals focus on high-payoff activities that improve performance. The study also showed that PM is used to establish and reinforce the competencies for the development of performance. It was found during a survey that new employee training, in-house training and support for continuing education, each reduced the probability of employees being dissatisfied with the performance appraisal process *(Spears and Parker, 2002)*. *Gabris and Ihrke (2000)* concluded from the results of a survey that attitudes change from before to after implementation of PMSs.

6. Indian Scenario

The socio-cultural context of India strongly influences its HRM policies and practices in general *(Budhwar and Sparrow, 1998)*. Indian society values strong family ties and extended family relationships, hence, there is a strong emphasis on collectivism, i.e., family and group attainments take precedence over work outcomes *(Kanungo and Mendonca, 1994)*. Therefore, nepotism is common both at the lowest and highest levels *(Sinha, 1990)* and, at times, selection, promotions and transfers are based on ascribed status, and social and political connections *(Sharma, 1984)*. Thus, it becomes

very difficult for non-family members to advance into upper management positions, particularly in private businesses. People orientation is paternalistic and consideration for social relationships and contacts overrides principles and rules *(Kanungo and Jaeger, 1990)*. Employees' orientation is more towards personalized relationships than towards performance *(Kanungo and Mendonca, 1994)*. Further, Indian work culture is characterized by the principle of "particularism" and "stability" *(Sharma, 1984)*, such as life long jobs, experience based career system and job tenure based compensation packages.

Lack of objective PM practices in India has allowed Indian managers to over- and under-control employees *(Lindsay* and *Petrick, 1997)*. There have been no major breakthrough in Indian potential appraisal and potential development practices; reward administration and promotion decisions are traditional; Counselling and OD are being increasingly used but qualitative improvements are needed to feel the impact *(Rao* and *Abraham, 1986)*. Need for effective performance counseling, with focus on employee skill development that will improve current performance and enhance career opportunities, has been felt *(Sanyal* and *Alam, 2008)*. The prevailing absence of the mutual influence in India, especially managerial receptiveness to employee feedback, leads to resistance to the implementation of effective PMS *(Kanungo* and *Misra, 1988)*. It can be taken care of by increasing employee involvement *(Amba-Rao, 2000)*. PM in India has been a contentious issue, yet it is fundamental to other HRM activities that involve developmental (e.g., coaching and training) and evaluative (e.g., pay and promotion) aspects *(Mendonca* and *Kanungo, 1990)*. *T V Rao (2008)* suggested the following changes in order to improve PMS as a system :

- Change from 'Appraisal' to 'Management' and focus on "Contributions and Improvement"
- Recognize the comprehensiveness of PMS as a system
- Recognize the complexities of the multi-dimensional PMS
- Allocate adequate time and legislate the same and if required plan it into the company calendar
- Take HR managers out of PMS, decentralize and shift PMS to Performance Managers developed from line jobs
- Make PMS a part of the budgeting process and integrate with other systems of the company
- Create a new Index—"Performance Index"—for each employee and make it quarterly and annual
- Use technology to support the work
- Implement PMS rigorously and give it the seriousness it deserves.

7. Modern Trends

Since PMSs involve a considerable amount of paperwork, writing and exchange of documents, e-PMS has become the rage of the day. In fact, evaluations of automated PMSs show that they are viewed positively by managers and employees, decrease workload, ensure widespread access to PM tools and provide a standardized, structured approach to collecting and storing performance data *(Kandula, 2005)*.

8. Conclusion

The review of literature shows that Performance Management evolved gradually to overcome the weaknesses of Performance Appraisal. A PMS provides a rational framework for establishing goals, objectives, and performance measures as well as basis for making employment-related decisions (pay increases, promotions, etc.). If managed correctly, an employee should never be surprised regarding where he stands, the expectations of him, and how he is doing towards attaining goals. A PMS is effective in establishing a dialogue and forum between the manager and the employee concerning goals *(Glendinning, 2002)*. The benefits of an effectively implemented and monitored PMS are :

- Improved work performance *(Allan, 1994)*
- Employees with potential for advancement are identified *(Allan, 1994)*
- Planning for future HR needs is augmented *(Longenecker and Fink, 1999)*
- Business objectives are realized
- Improved morale
- Improved customer satisfaction
- A clear linkage between pay and performance is achieved *(Anonymous, 1998)*
- A competitive advantage is obtained *(Randall and Hayes, 1995)*
- Improved quality of supervision *(Markowich, 1994)*

To be effective, PMS requires a supportive organisational culture, performance management must be made the focal point of human resource management and link it to organisational goals.

In conclusion, it can be said that "Any failure by organizations to adopt effective performance management systems is costly, in terms of: lost opportunities; unfocused activity; loss of motivation and morale, [and] surrender to mediocrity. Lack of performance management negates the vision a business has for the future, and leaves the organization's major resource without focused commitment to the achievement of the organization's business strategies" *(Anonymous, 1996)*.

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Significance of Open Interest-Based and Trading Volume-Based Predictors—An Empirical Study of the Option Market in India

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Abstract : The information content of the option market for predicting the future price index in the underlying cash market in India has been examined in this paper by applying the method of open interest and trading volume-based predictors. Daily data for both price as well as non-price variables for the study period of July 2014 to December 2014 have been employed to explore the above relationship. In the study, open interest-based predictors are found to be significant in predicting the future underlying cash market. But as far as volume-based indicators are concerned, it shows some mixed evidence. Both the indicators are statistically significant at any conventional level of significance when all of them are taken together. However, volume-based predictors turned out statistically insignificant when it estimates alone with the current cash index, the future price of the Index in cash market. Based on the value of Adjusted R Squared and F-Statistics in the study period we can conclude that informational role in the Indian Derivative market has played an important role in predicting future price of underlying cash market.

Key-words : Open interest based predictor, trading volume based predictor, underlying assets.

1. Introduction

Derivative securities are considered as additional means for informed traders to trade on their information and for others to discover that information. Derivatives may not only lead the underlying assets in imparting information, they may also provide information that simply cannot be inferred from the markets in underlying assets. This paper examines the role of non price variables of options market like open interest and trading volume in conveying information about the future movement of the underlying asset. This study shows that the activity in the equity options market seems to contain information about future stock price that can be exploited for trading purposes. Financial economists have long been interested in the process of price formation when informed traders, uninformed liquidity (or noise) traders and market makers interact in the asset market. Derivative instruments, like option contracts, enhance informational efficiency of the underlying's market. An option is a contract between two parties giving the taker (buyer) the right, but not the obligation, to buy or sell an underlying asset at a predetermined price on or before the predetermined date. It is one of the important derivative instrument traded in derivative exchanges all over the world. It is well known that trading in options may be more attractive than trading in underlying assets in spot (cash) market

due to economic incentives provided by reducing transaction cost, capital requirements and trading restrictions, commonly seen in the equity market. The attractiveness in the equity market can be proved by the increasing trend in the total traded value in the option market over a period of time in a fast moving developing country like India. Option can be used for both hedging as well as speculation. It is well documented in the research that not only the option prices, but also the non-price variables, such as open interest, trading volume, etc., form the option market can affect the stock prices in the underlying equity market.

2. Objective of the Study

The study investigates the impact of non-price variables viz. open interest and trading volume of index option from the option market in predicting the price index; viz. Nifty index in the underlying cash market in India. By applying the method of open interest and volume-based predictors for both call and put options, this study empirically investigates the hypothesis (stated below) that the above non-price variables in the option market cannot be used to predict the future price index in the underlying cash market. This study is based on daily data for both price as well as non price variables over the sub period June 2014 to December 2014. It reveals that the open interest based predictors are significant in predicting the underlying spot price index in the sub period.

H_0 : Non-price variables in the option market cannot be used to predict the future price index in the underlying cash market.

H_1 : Non-price variables in the option market can be used to predict the future price index in the underlying cash market.

3. Review of Literature

A considerable amount of literature deals with the interrelationship between the derivative markets, viz., options market, and underlying cash market. Different issues addressed in those studies include (1) the effect of option listing on the volatility, bid-ask spread and liquidity of underlying cash market; (2) the options expiration effect on the prices of underlying cash market at maturity; (3) the lead-lag relationship among the price as well as non-price variables from both options market; (4) the role of the option market in discovering the price in underlying cash market etc. A brief review of some of the past literature, relevant to this study, is presented below.

Many of the previous research studies have tried to examine the options listing effect on the volatility, liquidity etc., of the underlying cash market all over the world, document the option expiration effect on the prices of the underlying cash market at the time of maturity, and report the lead-lag relationship among the price as well as non price variables from both options and underlying cash market. Since the main aim of the study is to examine whether the open interest and trading volume from the option market are significant in explaining the future movement of prices in the underlying cash market, it could not be explained by the previous studies discussed here– which cover all the aspects of the interrelationship between the options and cash market.

Bhuyan, Rafiqul and Chaudhury (2001) examined the role of option market's open interest to capture information about the future movement of underlying stock and show that the trading

strategies based on this predictor yields better results as compared to the buy-and-hold and passive covered call strategies. Further, Bhuyan and Yan (2002) developed several price predictors from the open interests and trading volumes of individual stocks from the option market and concluded that these factors exhibit significant explanatory and predictive power for the future stock prices. The encouraging results provided by this study are one of the driving forces for the present initiative.

There is a general agreement with the basic premise drawn by Bhuyan and others (2001), and Bhuyan and Yan (2002) that as against the total volume considered by one of the previous studies, net open interest of call options and put options together should provide a better indication of the future stock price movement. Srivastava (2003) examined the informational role of stock option market in India using this approach. However, it was conducted for a small period, i.e., four months. The present study is among one of the earlier attempts to document the impact of non-price variables of stock option market on the underlying stocks in the Indian context with a longer sample period.

Through this study, the authors seek to provide a valuable input to the uninformed investors using, which they can discover, the price of underlying asset in a more efficient as well as effective manner. The results are encouraging and provide a basis for further examination of different variables in option market and their interrelationships with the underlying stock price.

4. Data and Methodology

The National Stock Exchange (NSE) India has commenced trading in S&P CNX Nifty Index Options from June 4, 2001. This study covers the study period July 2014 to December 2014. Daily data relating to price as well as non-price variables such as spot price index in the underlying cash market, and open interest, trading volume, different strike price, etc. in the option market, have been collected for the sub periods. There are three types of options contracts available in the Indian market—which gets matured in one month, two months and three months. Since the option price on the nearest contract is characterized by high level of activity, all the data for both price and non price variables of index option on the first nearest contract, i.e., on the next month contract, are taken into account. Further, all the data on the expiration day have been excluded from the study in order to avoid possible bias expected to occur due to expiration effect. All the relevant data have been collected from NSE website and all the calculations have been made using MS-Excel and SPSS (version 16.0).

Methodology

The interrelationship between the open interest and trading volume in the option market and the prices in the underlying cash market can be measured by various techniques. But the present study, is based on a simple methodology used by Bhuyan, Rafiqul and Chaudhury (2001), Bhuyan and Yan (2002) and Srivastava (2003) for investigating the significance of the net open interest and trading volume in the Index option market. The term and notations applied in the methodology are same as used in the above studies.

Let 'T' be the time of maturity of a set of call and put option. The current price of the cash index is assumed to be I_t; while, X_i^C and X_j^P are assumed to be the set of strike prices for call

and put options, where i = 1,2,......k; j = 1,2,.......,m. Let O_{it}^{c} and O_{jt}^{p} be the net open interest at the current time 't' for call and put option with the strike price X_i^c and X_j^p respectively. Similarly, V_i^c and V_j^p are assumed to be the trading volume for a call and put option at time t with strike price X_i^c and respectively.

Now the two predictors open interest-based predictor and volume-based predictors that are proposed to be used in predicting the price of underlying cash index, can be defined by using the above variables.

The call option Open interest-based predictor (COP) can be defined as:

$$O_t^c = \Sigma_{i=k}^{k} W_{it}^c X_i^c$$

In the above equation, O_t^c represents the call option open interest-based predictor at a time t; while k denotes number of different types of call options showing some non zero open interest. W_{it}^c is the weight of call options with strike price of X_i^c.

The put option Open interest-based predictor (POP) can be defined as:

$$O_t^p = \Sigma_{i=k}^{k} W_{it}^p X_i^p$$

In the above equation, O_t^p represents the put option open interest-based predictor at a time t; while k denotes number of different types of put options showing some non zero open interest. W_{it}^p is the weight of put options with strike price of X_i^p.

The call option Volume-based predictor (VOP) can be defined as:

$$V_t^c = \Sigma_{i=k}^{k} q_{it}^c X_i^c$$

In the above equation, V_t^c represents the call option value-based predictor at a time t; while k denotes number of different types of call options showing some non zero open interest. q_{it}^c is the weight of call options with strike price of X_i^c.

The put option Volume-based predictor (VOP) can be defined as:

$$V_t^p = \Sigma_{i=k}^{k} q_{it}^p X_i^p$$

In the above equation, V_t^p represents the put option value-based predictor at a time t; while k denotes number of different types of put options showing some non zero open interest. q_{it}^p is the weight of put options with strike price of X_i^p.

Based on the open interest and volume-based predictors for call and put options, it is easy to find out the relative significance of each of these predictors by using multiple regression model such that:

$$LnIT = \alpha_0 + \alpha_1 ln(T-t) + \alpha_2 lnI_t + \alpha_3 lnO_t^c + \alpha_4 lnO_t^p + \alpha_5 lnV_t^c + \alpha_6 lnV_t^p + \varepsilon_t$$

Where I_T and I_t are the stock price at the date of maturity and at the current date respectively. (T–t) represents the actual time to maturity; O_t^C and O_t^P are the open interest-based predictors; while V_t^C and V_t^P are the volume-based predictors. ε_t denotes error term assumed to be white noise such that $\varepsilon \sim N(0, \sigma^2)$ and Cov $(\varepsilon_t, \varepsilon_{t-1}) = 0$. The natural logarithms of the entire variables are used to account for the heteroskedasticity, i.e. unequal variance among the variables. It is to be noted that, since the variable (T-t) is unable to improve the overall explanatory power (as shown by adjusted R^2) hence, it is removed from the above equation. Now the revised equation is

$$LnI_T = \alpha_0 + \alpha_1 lnI_t + \alpha_2 lnO_t^C + \alpha_3 lnO_t^P + \alpha_4 lnV_t^C + \alpha_5 lnV_t^P + \varepsilon_t \text{....(Eq. 1)}$$

In order to find out the relative significance of open interest-based predictors and volume-based predictors separately in the matter of price fixation in the underlying cash market, the following regression equations have been estimated excluding one set of parameter (either open interest or trading volume):

$$LnI_T = \alpha_0 + \alpha_1 lnI_t + \alpha_2 lnO_t^C + \alpha_3 lnO_t^P + \varepsilon_t \text{....(Eq. 2)}$$

$$LnI_T = \alpha_0 + \alpha_1 lnI_t + \alpha_2 lnV_t^C + \alpha_3 lnV_t^P + \varepsilon_t \text{....(Eq. 3)}$$

All the above regression equations have been solved for the study period July 2014 to December 2014. To remove the influence of expiration of option contracts at the date of maturity, all the equations have been estimated by excluding the date of expiration of the contract in one case and by excluding the previous five days up to the expiration in the other.

5. Results

The hypothesis that the non price variables viz., open interest and trading volume in the option market, do not have the significant explanatory power in predicting the future price of the underlying cash index is tested through the multiple regression equations (eq 1 to 3). Though the price index at the time of maturity and at the current date can be directly observable, but the value of other independent variables have been calculated as in the same way as mentioned in the 'data and methodology' section.

The meaning of notations used in regression equation in the following table are as follows.

LnI_T	Natural log of closing index at maturity
LCI($\ln I_t$)	Natural log of current index
LOIBPCO ($\ln O_t^C$)	Natural log of open interest-based predictor based on call option
LVBPCO ($\ln V_t^C$)	Natural log of value-based predictor based on call option
LOIBPPO ($\ln O_t^P$)	Natural log of open interest-based predictor based on put option
LVBPPO ($\ln V_t^P$)	Natural log of value-based predictor based on call option

Table 1 : Regression Result for the Study Period

Panel A : Excluding only the expiration date				
Variable	Coefficient	S.E	t-Statistics	Prob.
Intercept	-3.216	0.731	-4.397	0.000
LCI (lnI_t)	0.427	0.195	2.183	0.031
LOIBPCO ($ln\,O_t^c$)	1.244	0.194	6.409	**0.000**
LVBPCO ($ln\,V_t^c$)	0.025	0.123	0.203	0.839
LOIBPPO ($ln\,O_t^p$)	0.298	0.216	1.379	0.171
LVBPPO ($ln\,V_t^p$)	-0.636	0.17	-3.738	**0.000**
Adjusted R square = 0.823; F = 103.39				
Panel B: Excluding last five days up to the expiration date				
Variable	Coefficient	S.E	t-Statistics	Prob.
Intercept	-4.051	0.959	-4.223	0.000
LCI (lnI_t)	0.494	0.221	2.241	0.028
LOIBPCO ($ln\,O_t^c$)	1.558	0.287	5.42	**0.000**
LVBPCO ($ln\,V_t^c$)	-0.083	0.171	-0.487	0.628
LOIBPPO ($ln\,O_t^p$)	-0.003	0.334	-0.01	0.992
LVBPPO ($ln\,V_t^p$)	-0.515	0.241	-2.133	**0.036**
Adjusted R square = 0.803 ; F = 71.32				

The findings have been broadly categorised into two parts. The first category includes all the results derived from regression equation 1 where both open interest-based predictors and volume-based predictors for both call option and put option are taken into consideration to observe their relative significance in predicting the future price index in the underlying cash market. The results are reported in table 1. While the second category is derived from equation 2 and equation 3 where both the predictors for call and put options are considered separately (through different equations) and are reported in table 2 and table 3.

The results in all the tables (1 to 3) are divided into 2 panels. Panel A in each table reports the results which are based on the data set where all the data only on the date of expiration of option contract are excluded. While the panel B reports the results based on the data set excluding all the data of previous five days up to the date of expiration of option contract.

Table 1 reports the results based on regression equation 1 where both open interest-based predictors and volume-based predictors for both call option and put option are taken into

consideration to observe their relative significance in predicting the future price index in the underlying cash market during the study period July to December 2014 i.e. just after the end of coalition government UPA 2 in India. The table shows that there is not much difference in the result reported in Panel A and Panel B. Both panels reveal that open interest-based predictors based on call option and volume-based predictors based on put option are found to be significant in explaining future movement of the underlying price movement at conventional 1% or 5% level of significance. It is noted that result of open interest-based predictors during the study period found significant positive coefficient and negative coefficient with volume based put option predictors. It indicates that the investors expecting the price of underlying cash index to increase and they prefer to buy the call option at higher strike price and prefer to sell put option. In other words, the relationship among the open interest-based predictor and future price is positive for call option and negative among the value-based predictors and future price in case of put option.

From the table 2 it can be observed that there is not much difference in the results if an open interest-based indicator is considered separately in estimating the equation 2. This table confirms that open interest-based predictor during the study period of Panel A and Panel B shows significant explanatory power in predicting the future price index in the underlying cash market. From table 3 it can be observed that there is much difference in the results if value-based indicators are considered in predicting the future price of underlying cash market. These indicators fail to explain statistically the future price index at conventional level 1% and 5% level of significance.

Table-2 : Regression Result for Open Interest-based Predictor during the Study Period

Panel A : Excluding only the expiration date				
Variable	Coefficient	S.E	t-Statistics	Prob.
Intercept	-3.747	0.966	-3.250	0.002
LCI (lnI_t)	0.121	0.12	0.008	0.994
LOIBPCO ($ln\,O_t^C$)	1.72	0.256	6.435	**0.000**
LOIBPPO ($ln\,O_t^P$)	-0.425	0.245	-0.237	0.813
Adjusted R squared = 0.802; F = 149.44				
Panel B : Excluding last five days up to the expiration date				
Variable	Coefficient	S.E	t-Statistics	Prob.
Intercept	-3.747	0.966	-3.877	0.000
LCI (lnI_t)	0.121	0.12	1.002	0.319
LOIBPCO ($ln\,O_t^C$)	1.72	0.256	6.714	**0.000**
LOIBPPO ($ln\,O_t^P$)	-0.425	0.245	-1.733	0.087
Adjusted R squared = 0.795; F = 112.1				

Table 3 : Regression Result for Volume-based Predictor during the Study Period

Panel A : Excluding only the expiration date				
Variable	Coefficient	S.E	t-Statistics	Prob.
Intercept	3.252	0.528	6.159	0.000
LCI (lnI_t)	0.002	0.294	0.005	0.996
LVBPCO ($ln\,V_t^c$)	0.333	0.184	1.814	0.072
LVBPPO ($ln\,V_t^P$)	0.304	0.208	1.461	0.147
Adjusted R squared = 0.58; F = 52.57				
Panel B : Excluding last five days up to the expiration date				
Variable	Coefficient	S.E	t-Statistics	Prob.
Intercept	3.894	0.624	6.24	0.000
LCI (lnI_t)	-0.047	0.325	-0.143	0.887
LVBPCO ($ln\,V_t^c$)	0.226	0.243	0.929	0.356
LVBPPO ($ln\,V_t^P$)	0.388	0.24	1.621	0.109
Adjusted R squared = 0.803; F = 71.32				

However, there is a little change (except table 3) in the value of adjusted R square while going from Panel A to Panel B (table 1 and 2) and there is a significant decrease in their F-value in all cases (except table 3) while going from Panel A to Panel B (table 1 and 2), which confirms that the overall explanatory power of non-price variable in option market is influenced by not only the date of expiration but also the previous five days up to the date off expiration.

6. Conclusion

By applying daily data on both price and non-price variables from equity and option markets, an effort has been made to examine the significance of open interest and trading volume from the index option market in explaining the future price movements in the underlying cash market in India. This study documents significant results in explaining the price movement when all the variables i.e. price variable and non-price variable in the recent time in the option market of India but when volume-based indicators are considered alone they fail to capture the future price movement of cash market index. However we can conclude that the informational role of the option market non-price variable in predicting the future price index played an important role in Indian capital market.

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Annexure

Steps to be followed while calculating the open interest-based and volume-based predictors for both call and put option

Step 1 : Extract the data for the nearest month contract and also nonzero open interest.

Step 2 : Remove all the data other than current data, date of maturity, strike price and open interest.

Step 3 : Calculate the weights proposed to be used for different strike price. This step follows two sub steps.

(i) Calculate the sum of nonzero open interest for different strike prices in a given trading day which is denoted by $\Sigma_{i=1}^{k} O_{it}^{c}$ or $\Sigma_{j=1}^{k} O_{it}^{p}$, i and j refers to the set of strike prices for call option and put option respectively; and t is the current time.

(ii) Divide the open interest for different strike price by that sum for all the days, such that $W_{it}^{c} = O_{it}^{c} / \Sigma_{i=1}^{k} O_{it}^{c}$ or $W_{jt}^{p} = O_{jt}^{p} / \Sigma_{i=1}^{k} O_{jt}^{p}$.

Step 4 : Multiply each strike price with their corresponding weights calculated as per the above steps.

Step 5 : Sum up the resultant strike prices for a given day as given in step 4 to get a single strike price in a single day. The final figure is termed as open interest (Call or Put)-based predictors.

The volume-based predictors are also calculated in the same way.

The Financial Turmoil of 2007-2008 : From 'Subprime' to 'Global' *En Route* Mortgage Securities

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Abstract : The paper appraises the financial turmoil of 2007-2008 which originated in United States housing market and later spread throughout the global economy. U.S. house prices started a steady south-ward journey consequent to bursting of the house price bubble. Borrowers were left with outstanding mortgage loans much higher than the value of the property. The mortgage borrowers opined that higher mortgage level payments on a house whose value has declined considerably did not make much 'financial sense', which led people to 'walk away' from their houses. This led to widespread foreclosures which considerably increased the inventory of foreclosed property forcing housing prices to plummet further. Financial institutions faced huge losses as the value of assets (foreclosed houses) fell significantly along with drastic increase in mortgage loan default rate. Mortgage securities, which are important funding instruments in the housing finance system, are much prevalent in the U.S. housing market. Banks and non-banking financial institutions which had invested in these securities suffered huge losses as the value of these instruments declined significantly when delinquencies increased. Several of these entities collapsed along with the housing sector. This paper investigates the role of mortgage securities in the arena of housing finance and argues that excessive financial engineering is one of the major causes of the financial turmoil. This paper also argues that the process of 'securitization' was vital in transforming the 'subprime' crisis into a 'global' financial crisis. However, in the context of Indian housing finance system, this paper concludes that the impediments to the growth of secondary market have actually insulated the system from a similar crisis.

Key-words: Mortgage securities, subprime loans, Alt-A, serious delinquency, structured finance, collateral debt obligation.

1. Introduction

The elementary aspect of 'housing' is shelter and housing finance is basically financial assistance for acquiring a house. Housing finance may be formal provided by financial institutions (either specialized institutions dedicated in providing financial assistance for housing or general purpose financial institutions which provide such assistance in addition to other loans) or informal in the form of direct financial assistance from relatives and friends. An entity which provides such assistance abides by the housing policies of the respective states as providing shelter to the population is an important agenda for every state. For developing countries like India where the housing shortage is substantial in spite of the best efforts of the government, role of the housing finance institutions (HFIs) is more significant. An HFI has to balance between the social issue of providing specialized financial assistance and the issue of profitability. Profitability of these entities depends largely on

the spread which is the difference between average yield on housing loans and the average cost of funds. An HFI approaches the capital market through issuance of debt securities or take non-conventional route of financing which is referred as the 'mortgage security' route in order to reduce their cost of capital (Chiquier, Hassler & Lea, 2004). A secondary mortgage market (SMM) is a market for trading of the mortgage securities which unites the originators (of mortgage loans) and the investors. Development of the SMM frees the lender from excessive dependence on expensive retail funding sources (branch networks) for mobilization of funds. A well developed SMM helps HFIs to reduce the risks associated with mortgage lending and, therefore, is an important issue in the development of the housing finance system (HFS)[1] of a country. A SMM (a) attracts new investors into the mortgage market and increases the flow of funds into the housing sector (b) increases liquidity of mortgage loan assets and decreases the risk of providing long term finance (c) reduces geographical segmentation of sources of finance of the HFI as these entities are able to tap international funds (d) allows the HFIs to reduce their average cost of funds by tapping non-traditional sources of finance which makes the overall HFS more efficient. Mortgage securities played crucial role in the financial crisis (2007-2008) which ensued in the primary mortgage market in U.S. as delinquencies on housing loans increased manifold forcing massive foreclosures. The financial crisis which was initially called 'subprime' crisis transformed into a 'global' crisis through mortgage securities. This transformation was predominantly due to over-liquidity of the mortgage securities within the U.S. HFS which was noted, earlier, as an 'advanced housing finance system' by Renaud (1999).

2. Mortgage Securities .

Housing finance institutions, which originate housing loans, either follows the 'originate to hold' model where the housing loans remain in the Balance Sheet of these entities or takes the 'originate to transfer' route where the mortgage loans are bundled and transferred to investors through the process of securitization. Thus securitization creates mortgage securities which transforms illiquid mortgage loans into marketable securities that draw new investors to the mortgage market and creates marketability of the mortgages. The main purpose of mortgage securities is to secure long term funds for housing. These instruments tantamount to non-conventional routes of financing and are aimed at;

- Tapping long term funds of institutional investors (pension funds and insurance companies) into the mortgage market,
- Increasing the liquidity of mortgages and reducing the risk related to housing loan for the loan originators,

The early forms of mortgage related securities are the 'wholesale loans'[2],'agency bonds' and 'mortgage bonds'. Wholesale loans' involve sale of mortgages, singly or more commonly in pools, to institutional investors. Agency Bonds are issued by government sponsored enterprises (GSEs)[3] in US and are entirely backed by mortgage loans purchased from the originators.' Mortgage bonds' (known as covered bonds or 'pfdanbriefe' in European countries) are issued by the originator as well as secondary HFIs against collateralized mortgage pools. The bonds are either straight (non-amortizing)

or pass-through (mortgage payments are passed through to investors). The investors have specific claim on the mortgage pools which are held as collaterals. As these three kinds of mortgage securities are privately placed with institutional investors, for further development of SMM, the Federal government used the process of 'securitization' to create mortgage-backed securities (MBSs) which are issued for the public and are traded in the stock exchanges.

3. U.S. Housing Finance System

The evolution of institutional mortgage lending in U.S. can be classified into three phases; phase one (1831-1931) witnessed the growth of many mortgage lending institutions and instruments. Phase two (1932-1981) featured growth of government-supported special circuits that dominated the arena of mortgage finance. Initiation and development of the secondary market was an important phenomenon of this phase. The last phase (1982-1996) was dominated by sophisticated 'securitization' in the arena of housing finance which amplified the use of mortgage securities (Lea, 1996). The mortgage market crisis (2007-2008) popularly known as 'subprime' crisis initiates yet another phase in the U.S. HFS.

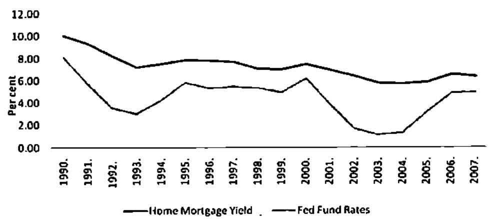
During the first phase the saving and loan associations (S&Ls) were the main housing loan originators and housing finance, as such, followed the simple 3-6-3[4] rule. As the SMM was not developed during this time, the S&Ls followed the 'originate to hold' model. Housing loans featured high down payments (which were often as high as 50 per cent), high loan to value (LTV) and shorter tenures (generally five years). Housing loan repayment was made through 'bullet payments'[5] and mortgage insurance was provided by private insurers. The second phase initiated with the establishment of Home Owner's Loan Corporation (HOLC) in 1933 which was instrumental in developing the long term fully amortized, low down payment, and level-payment loan [popularly known as the fixed rate mortgage (FRM)]. Federal Housing Administration (FHA), started in 1934, initiated an insurance program on housing loans originated by commercial banks and mortgage banks that led to the popularity of FRM. Federal National Mortgage Association (FNMA or Fannie Mae) was formed in 1938 to trade FHA insured loans. Fannie Mae issued 'mortgage securities' in the capital market and used the proceeds to buy FHA insured loans from the commercial banks and the mortgage banks. In 1968, Fannie Mae was transformed into a privately managed government sponsored enterprise (GSE) called the Government National Mortgage Association (Ginnie Mae) and Fannie Mae was allowed to trade conventional privately insured loans of the thrifts[6] and in 1970, the Federal Home Loan Mortgage Corporation (Freddie Mac) was started by the Federal government for purchase and sell of conventional housing loans of the thrifts. Later Freddie Mac was allowed to trade in housing loans originated by the commercial banks and the mortgage banks. The sophistication of the securitization process and the saving and loan crisis which initiated the adjustable-rate mortgages (ARM)[7] earmarked the third phase in the US HFS. The housing loan originators retained ARMs in their books, however, sold FRMs to Fannie Mae, Freddie Mac or Ginnie Mae, which then packaged the loans into mortgage- backed securities and sold them to institutional investors. Fannie Mae, Freddie Mac and Ginnie Mae developed an efficient secondary mortgage market to sustain trading of mortgage securities. Thus the process of 'securitization' created the most important mortgage security called mortgage-backed security (MBS).

The expansion of MBS issuances stimulated the integration of the mortgage market with capital markets and broadened the institutional base for mortgage funding. Financial engineering created multiple-class MBSs, known as the collateralized mortgage obligations (CMOs) and the real estate mortgage investment conduits (REMICs) which accelerated the process of integration of the financial market. These securities created 'tranches'[8] against varying levels of prepayment risk, better suited to the financial need of different investors. Excessive financial engineering along with an abnormal boom and corresponding bust of house prices resulted in a severe mortgage market crisis in 2007-2008 that shook the very foundation of the U.S. HFS.

4. The Financial Turmoil of 2007-2008

U.S. monetary policy (2000-2001) of 'low interest rate' injected enormous liquidity into the financial system. Short term interest rates were reduced to such level that the inflation adjusted rates often became negative. In Figure 1, the fed fund rate[9] and the home mortgage yield (average yield of mortgages, including origination fees and considering an average repayment period of ten years) is considered [ref. Annexure-Table 1]. Steep decline of fed fund rates (indicative of cost of funds for the home mortgage originators) along with fairly stable home mortgage yield, since 2000, is apparent from the chart. Thus mortgage loans and mortgage related securities became more profitable since 2000. Enhanced profitability along with booming house prices made mortgage related securities the ideal destination for the individual and the corporate investors.

Fig 1: Fed Fund Rates and Home Mortgage Yield

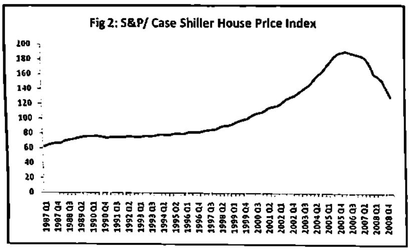


Source: Economic Report of President (2009) available at *http://www.gpoaccess.gov/eop/2011/pdf/ERP-2009.pdf* [data taken from Table -73, Bond yields and Interest Rates, 1929–2009 (in per cent) is represented in Table 1.

Note : Home Mortgage Yield is taken as the effective rate (in the primary market) on conventional mortgages, reflecting fees and charges as well as contract rate and assuming average repayment at end of 10 years].

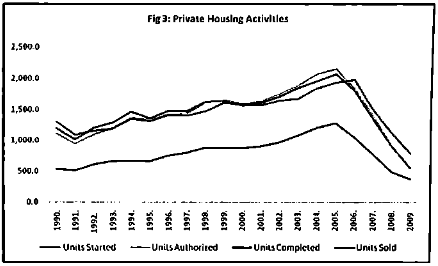
Better profitability in the mortgage loan segment induced the financial intermediaries to extend credit to individuals and companies with relatively poor financial records. Investors were forced to reallocate their portfolios in favour of riskier products in order to preserve the purchasing power of their investment.

With soaring house prices, mortgage loans became very attractive to the borrowers as home equity (excess of value of house over mortgage loans) formation became easy. Baker (2002) showed that inflation adjusted house prices remained unchanged (more or less) during 1953-1995, while Shiller (2006) analysed government data to show that real house prices remained essentially unchanged for 100 years prior to 1995. The boom and the bust of the housing bubble is apparent from Annexure-Table 2, which shows that the S&P/ Case-Shiller house price index increased from 118.00 in 2002 (1st quarter) to 189.93 in 2006 (2nd quarter) and declined steadily since then as the said index decreased from 189.93 in 2006 (2nd quarter) to 183.17 in 2007 (2nd quarter) and further plummeted to 129.20 during 2009 (1st quarter). Thus the period 2002 (1st quarter) to 2006 (2nd quarter) may be identified as the boom of the housing market bubble while the period 2006 (3rd quarter) to 2009 (1st quarter) may be indicated as the bust of the bubble.



Source : Data available at *http://www.macromarkets.com/csi_housing/sp_caseshiller.asp*.
(Refer to Annexure-Table 2)

This boom and bust of the housing market bubble is also evident from the data on private housing construction activities (housing units started, authorized, completed and sold [Annexure- Table 3]). The private housing activities (excluding government supported activities) data for the period 1990-2008 is represented in Figure 3 below. It is apparent from the figure that private housing construction activities which increased up to 2005-2006, declined significantly indicating the deepening of the housing crisis. Consequently mortgage loans dried up and mortgage related securities became less profitable.



Source : Economic Report of President available at *http://www.gpoaccess.gov/eop/2009/pdf/ERP-2011.pdf* [Table B-56. New private housing units started, authorized, and completed and houses sold, 1962–2009].

The house price bubble was a result of two significant developments: (a) 'stock wealth'[10] created during 1990s and (b) reduction of interest rates initiated in 2000. Baker (2008) opined that the wealth accumulated through increase in stock prices during 1990s induced a surge in demand of housing as people found investment in house a good alternative which triggered the housing bubble. It has been earlier noted (Fig 1) that the yield from mortgages remained stable though the average cost of funds fell considerably. This implied increase in profitability of mortgages which enormously increased the issuance of mortgage related securities.

5. The Subprime Mortgage

Due to excess supply of funds, 'zero down-payment' loans, 'teaser' rate ARMs (adjustable rate mortgage)[11], 'low/no documentation' loans were devised to attract new borrowers including those with improper credit history, earlier denied of mortgage loans, categorized as the subprime and Alt-A borrowers. Regarding subprime loans, the U.S. Treasury issued the following guidelines in the year 2001:

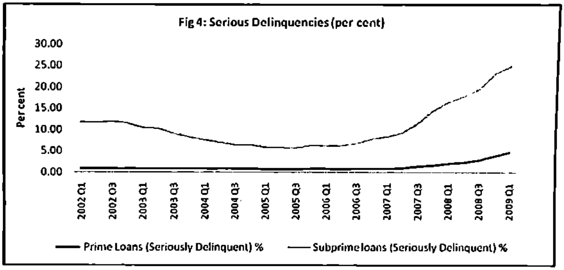
> *"Subprime borrowers typically have weakened credit histories that include payment delinquencies and suffer from severe problems such as charge-offs, judgments, and bankruptcies. They may also display reduced repayment capacity as measured by credit scores, debt-to-income ratios, or other criteria that may encompass borrowers with incomplete credit histories".*

The subprime mortgage was designed by the financial institutions and other intermediaries on the assumption that the dominant form of wealth for the low and moderate income (LMI) households is potentially their home equity (defined as the value of the property less the mortgage held). Gorton (2010) noted that 'No other consumer loan has the design feature in which the borrower's ability

to pay is so sensitively linked to the appreciation of the underlying asset'. Thus mortgages were developed as 'teaser' rates and 'hybrid' structures (2/28 or the 3/27 Hybrid ARM) with 'reset' dates when the mortgages shifted from FRM to ARM. Home equity is built up in the initial years with appreciation in home prices. The implicit design of the subprime mortgage is such that after the initial years when sufficient home equity has been built up, the subprime borrower would sell off the first house and use the proceeds to pay off the mortgage debt and use the surplus wealth as down payment for the second mortgage for financing the second house. But the 'catch' was that these loans came with prepayment penalties which acted as a deterring factor in foreclosure of loans. Thus the subprime mortgages solely depended on house price appreciation.

The subprime mortgages were riskier than the prime mortgages. The National Delinquency Survey[12] which shows that in 2004 (1st quarter) 'serious delinquency rate'[13] of subprime loans was 9.5 times higher than that of prime loans (serious delinquency rate on subprime loans was 7.72 per cent, while the rate on prime loans was 0.81 per cent) [Annexure-Table 4]. However, it is observed (Table 5) that subprime loan origination which was 8.01 per cent of the total loan origination in 2002, increased significantly to 20.13 per cent in 2006. It may be noted that in spite of riskiness of these subprime mortgages, its share rose significantly during 2002-2006. Since these mortgages were riskier, the mortgage originators followed the 'originate to transfer' model. More and more of these subprime loans were off loaded from the Balance Sheet of the originators and securitization of subprime mortgages increased from 50 per cent in 2001 to 80.50 per cent in 2006. This supports the argument that the loan originators were well aware of the riskiness of the subprime mortgages and therefore preferred the 'originate to transfer' model in order to get rid of the risk associated with the subprime mortgages off their Balance Sheet.

Decline in house prices resulted in negative home equity ushering critical problem in the subprime mortgage market. As the value of the houses fell below the outstanding amount of mortgages, it did not make much financial sense to keep on paying the mortgage loans. This led to widespread defaults, especially in the subprime segment. During 2007 (3rd quarter), serious delinquency rate of subprime loans reached 11.38 per cent and further shoot up to 24.88 per cent in 2009 (1st quarter).Whereas increase in serious delinquency rate of prime loans was modest as it increased to 1.31 per cent in 2007 (1st quarter) and 4.70 per cent in 2009 (1st quarter) [Annexure-Table 4]. In Figure 4, serious delinquency rates on prime and subprime loans during 2004 (2nd quarter) to 2009 (1st quarter) is plotted. The windfall increase in serious delinquency rate of subprime loans, since 2006 (2nd quarter) is apparent. A slender increase in serious delinquency rate of prime loans since 2007 (4th quarter) is also evident.



Source : Historical Data, *National Delinquency Survey, 2006 Q4, 2009 Q1*, Mortgage Bankers Association

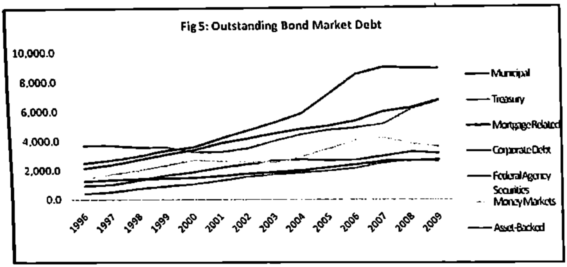
6. From 'Subprime' to 'Global'

In financial literature the spread of a crisis is termed the 'contagion' effect. Two specific kinds of 'contagion' effects have been identified. 'Direct contagion' involves co-movements in asset prices and other financial developments that reflect tangible and direct financial linkages. This creates serious impacts via trade relationships and consequentially a major banking crisis in one country results in losses for investors in other countries. The other, known as 'indirect contagion' is the residual category and includes all those channels that are not covered under direct contagion. Irrational panics and herding behaviour are essential aspects of this category and are more important in the era of instantaneous communication (Kamin & DeMarco, 2010). Karolyi (2003) referred to some other channels for the spread of a financial crisis. He argues that these channels are entirely rational, though not associated with the contagion effects discussed earlier. One of this is the 'wake-up call' hypothesis that has been referred as the main reason for the rapid spread of the Asian financial crisis (Goldstein, 1998).

Only the direct contagion effect of the subprime crisis has been considered in this paper though the magnitude of the crisis suggests that the indirect contagion and other transmission channels referred by Karolyi (2003) also played significant role in the transformation of the U.S. housing slump into a global financial crisis. This section deals in the mortgage related securities issued in the U.S. financial market along with the exposures of various countries to such securities. The simple proposition of this paper is that since the value of the mortgage backed securities became valueless owing to increasing default rates of the subprime mortgage loans, countries with more exposures to these toxic mortgage securities (subprime loans as the underlying asset) suffered more loss and thus the 'subprime' crisis spread like forest fire and resulted in a 'global' financial crisis.

An increasing proportion of the subprime mortgage loans were securitized as earlier pointed out. It is also evidenced that mortgage related securities which was $2486.1 billion in 1996 (20.27 per

cent of the total bond market debt) increased moderately to $4127.4 billion in 2001 (21.97 per cent of the total bond market debt). Since then the share of outstanding mortgage related securities increased sharply to $ 8913.4 billion in 2007 representing 27.82 per cent of the total outstanding bonds issued in the U.S. economy[14]. Figure 5, represents an overview of the U.S. outstanding bond market during 1996-2009 (Annexure-Table 6). Significant increase in outstanding mortgage related securities since 2001 is apparent from Figure 5.



Source: U.S. Department of Treasury, Federal Reserve System, *Securities Industry and Financial Market Association*. Available at *www.sifma.org/research/pdf/overall_outstanding.pdf*
(analyzed in Annexure-Table 6).

The mortgage related securities are mainly MBSs which are traded by the mutual funds, pension funds and hedge funds and sold all over the world to institutional investors as low risk (high investment grades) investments with attractive rate of return. Since these MBSs are held by institutional investors (worldwide) on a 'mark to market' basis, the default in underlying mortgage loans made these products valueless which led to huge losses. In 2008, foreign holdings of U.S. long term asset-backed securities (ABSs) were $1532210 million which comprised of $772538 million agency ABSs[15] and $759673 million corporate ABSs (of this $458374 million was MBSs) [Annexure-Table 7&8]. Thus, $1230912 million (agency ABS and corporate MBS) of the total foreign institutional investments was backed by mortgages (MBSs) which represented 80.34 per cent of the total ABSs issued in U.S. On analyzing the country wise break up of US mortgage bond holdings it is apparent that investments in agency ABSs are primarily held by Asian countries, in fact, increased from $373910 million (2007) to $587452 million (2008), while European countries invested primarily in corporate MBSs (Figures 6 and 7 below). There has been huge redemption of corporate MBSs held by the European countries during 2007-2008 as these reduced from $342011 million in 2007 to $215059 million 2008. Department of Treasury (2008) observes that Indian institutional investment in asset backed securities issued by U.S. agencies was merely $2 billion

dollars (2008) and was nil in corporate MBS. Thus, the subprime mortgage crisis which originated in the U.S. mortgage market transformed into a 'global' financial crisis but India remained insulated as its exposure to these toxic assets was very low.

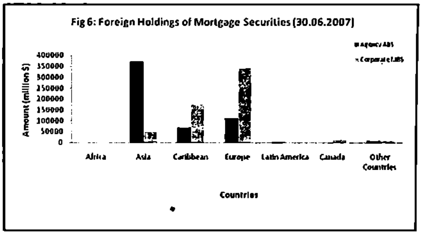


Fig 6: Foreign Holdings of Mortgage Securities (30.06.2007)

Source: Report on Foreign Portfolio Holdings of U.S. Securities (2007). Department of Treasury, Federal Reserve Bank of New York, Board of Governors of the Federal Reserve System.

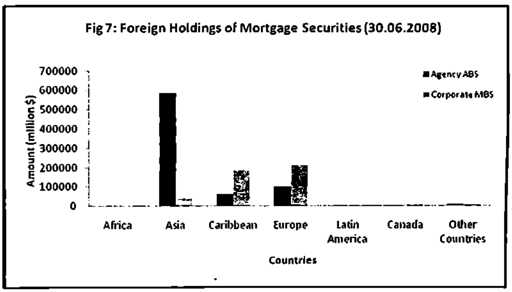


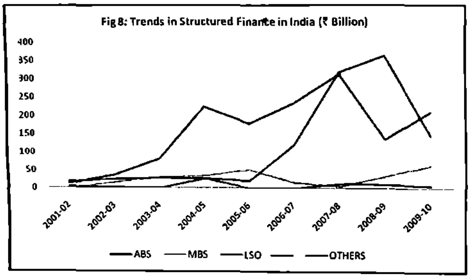
Fig 7: Foreign Holdings of Mortgage Securities (30.06.2008)

Source: Report on Foreign Portfolio Holdings of U.S. Securities (2008). Department of Treasury, Federal Reserve Bank of New York, Board of Governors of the Federal Reserve System.

7. Securitization in India

The inception of the Indian HFS is rather late in comparison to the U.S. system. In 1971, Housing and Urban Development Corporation (HUDCO) was started by Government of India (GOI) with the

objective of implementing social housing projects. Mortgage financing was initiated with the establishment of Housing Development Finance Corporation (HDFC), in 1977. In 1988, National Housing Bank (NHB) was started as a development finance institution to formally create a structured HFS in India. Mortgage finance was simply financial assistance by primary lending institutions for acquiring a house. These entities depended on traditional sources of finance for funding their housing loans as secondary mortgage market was absent in India prior to the year 2000. NHB, in partnership with HDFC and LIC Housing Finance Ltd, issued India's first MBS in August 2000 (The size of the transaction was '10.35 billion comprising 11106 individual housing loans of HDFC and LIC HFL). For enabling the securitization process 'The Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest' (SARFAESI) Act was enacted in 2002. As observed in Figure 8, the proportion of mortgage backed securities was significantly low in comparison to the other structured finance instruments available in the Indian securitization loan market.



Source : website of various credit rating agencies

There have been some serious impediments to growth of secondary mortgage market in India. In the following lines some of the impediments have been outlined.

a) Lack of effective foreclosure laws prohibits the growth of securitization. In India the SARFAESI Act was enacted in 2002, prior to which the existing foreclosure laws were not lender-friendly and increased the risks associated with MBS.

b) The definition of 'securities' in the Securities Contracts (Regulation) Act (1956) did not cover pass-through certificates (PTCs)[16] which prohibited stock exchanges from listing these instruments.

c) Ambiguity under the SARFAESI Act regarding the formation of an SPV trust for securitization process[17]

d) The mortgage market in India is found to be dominated with ARM (popularly known as variable rate mortgages or VRM in India) which makes securitization difficult in absence of standardized products.

e) The PTCs have not been allotted the status of 'reserve' securities that encourage trading by commercial banks. This results insufficient liquidity support for secondary market trading of residential mortgage backed securities.

f) Credit rating of the individual borrower was absent in India. Though CIBIL has been started in 2004 which maintains database on all borrowers, similar to FICO in US, the process of information dissemination is not yet efficiently available.

g) In the Indian HFS there is a handful of housing loan originators and the investor base is also limited. Institutional investors are apprehensive about the quality of the MBSs and prefer government securities.

h) There are insufficient guidelines and accounting policies for treatment of the subordinate tranche on the originators balance sheet (both with respect to taxation and capital adequacy requirements).

These impediments, to the growth of secondary mortgage market, have insulated the Indian HFS from a housing market crisis and has actually helped policy makers to develop a fail-safe secondary market for free trading of the PTCs.

8. Conclusion

This paper appraises the transformation of the 'subprime' crisis into a 'global' financial crisis. The crisis which ensued in the subprime mortgage market due to sudden increase in delinquencies of subprime mortgage loans erupted into a much bigger crisis due to 'securitization'. The enormity of the crisis was due to the volume of issuance of MBSs and the domino effect of the crisis was due to investments made by banking and other financial institutions (worldwide) in these securities. India's exposure to US mortgage securities has been negligible. Further, the impediments in the Indian secondary mortgage market have stalled the growth of the MBSs market in India. This paper proposes that these impediments are boon in disguise as lessons can be taken from the U.S. mortgage market crisis in developing a fail-safe secondary market for trading of MBSs. First and foremost the PTCs should not be allowed to be traded in the stock exchanges and individual investors should be barred from trading in MBSs. Secondly, a tight regulatory check should be maintained by the NHB on the secondary market. Thirdly, role of HUDCO should be broadened to reduce housing shortage and easy loans (like the subprime loans or the Alt-A loans) should not be devised for extending financial assistance to financially-weak borrowers. Fourthly, NHB should keep better control on the rate of delinquencies on housing loan and should publish data on the delinquency rate like the National Delinquency Survey in U.S. It is also important that government does not make drastic changes in its monetary policies, especially to such sensitive issues like interest rate on which the mortgage market depends. Though the Indian mortgage market is far from a crisis in the nature of the subprime crisis, the above proposals may help the Indian housing finance industry reap the benefits of securitization at the same time remain insulated from the vagaries of securitization.

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Endnotes

1 The term 'HFS' refers to a financial service delivery system in which various intermediaries compete in performing three main functions: funding, lending, and servicing of housing loans.

2 The sale of entire pool of housing loans were popularized by saving and loan associations in the US during 1960s and 1970s.

3 The GSEs (Fannie Mae, Freddie Mac, Ginnie Mae and Federal Home Loan Banks) are government

chartered, limited purpose corporations at secondary (i.e., not the loan origination) level. They enjoy a number of tax and regulatory privileges that translate into lower funding costs (Lea, 1999).

4 The 3-6-3 rule states that the managers of HFIs followed a simple strategy; they took finance at 3%, lent at 6% and went to play golf at 3 P.M.

5 Bullet Payment refers to lump sum payment of principal amount outstanding at the end of the loan tenure and regular payment of interest during the tenure of the loan.

6 The savings and loan associations of US and the building societies of UK are commonly known as thrifts. In US, the conventional loans of the thrifts are not insured by FHA and are therefore called privately insured loans (as they are often provided insurance by private insurance companies) where as those originated by commercial banks and mortgage banks are insured by FHA and securitized through the Fannie Mae.

7 St. Germain Depository Institutions Act of 1982 [Specifically, Title VIII—the 'Alternative Mortgage Transaction Parity Act of 1982', Sec.803 (A)] introduced mortgages 'in which the interest rate or finance charge may be adjusted or renegotiated' which is better known as the adjustable-rate mortgage (ARM).

8 Tranches are categories within a collaterized debt obligation on the basis of varying degree of riskiness of the mortgage backed security. The categorization is made on the priority in payment of principal and Interest.

9 In the United States, the federal funds rate is the interest rate at which private depository institutions (mostly banks) lend fund balances (federal funds) with the Federal Reserve to other depository institutions, usually overnight. It is the interest rate which banks charge each other for loans. (*http://en.wikipedia.org/wiki/Federal_funds_rate*).

10 Baker (2008) referred the wealth accumulated through increase in stock price as 'stock wealth'.

11 The teaser rate ARM are adjustable rate mortgages on which the initial coupon rate of interest is significantly low and the interest rate is realigned to the market rate of interest on the reset date (which is typically 2/3 years later).

12 This quarterly report is published by Mortgage Bankers Association (*www.mortgagebankers.org/research*). For this paper National Delinquency Survey (Q1, 2009) has been referred.

13 Serious delinquency rate means the percent of housing loans on which installments is past due for more than ninety days plus inventory of housing foreclosures during the quarter.

14 Data is available from US Department of Treasury, Federal Reserve System, Dealogic, Thomson Financial, Bloomberg, Loan Performance, SIFMA. (*www.sifma.org/research/pdf/overall_outstanding.pdf*)

15 Securities issued by Fannie Mae, Ginnie Mae and Freddie Mac are called Agency ABSs. These are necessarily backed by mortgage loans and may be classified as MBSs. Thus agency ABSs is considered as mortgage securities. For a detailed analysis see Table 5 and Table 6 of Annexure.

16 Pass through securities are specific kind of mortgage backed securities used in India.

17 This ambiguity has been resolved as the Reconstruction Companies (ARCs) and Securitization Companies (SCs) registered with the RBI has been allowed to establish multiple SPV Trusts, through specific provision incorporated in 7 (2A) of the SARFAESI Act (2002).

Annexure

Table-1 : Bond Yields and Interest Rates [percent per annum]

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Hom Mortgage	10.05	9.32	8.24	7.20	7.49	7.87	7.80	7.71	7.07	7.04	7.52	7.00	6.43	5.80	5.77	5.94	6.63
Yield Fed Fund Rates	8.10	5.69	3.52	3.02	4.21	5.83	5.30	5.46	5.35	4.97	6.24	3.88	1.67	1.13	1.35	3.22	4.97

Source: Economic Report of the President available at http://www.gpoaccess.gov/eop/2011/pdf/ERP-2009.pdf [Table 73, Bond yields and Interest rates,1929-2008 (in Per cent)

Table 2 : S&P Case Shiller Index

Year (Quarter)	S&P/ Case Shiller Index
2002 Q1	118.00
2007 Q1	184.83
2002 Q2	122.24
2007 Q2	183.17
2002 Q3	126.13
2007 Q3	180.01
2002 Q4	128.58
2007 Q4	170.75
2003 Q1	130.48
2008 Q1	159.36
2003 Q2	134.20
2008 Q2	155.93
2003 Q3	138.41
2008 Q3	150.48
2003 Q4	142.29
2008 Q4	139.42
2004 Q1	146.26
2009 Q1	129.20
2004 Q2	152.92
2004 Q3	158.53
2004 Q4	163.06
2005 Q1	169.19
2005 Q2	176.70
2005 Q3	183.08
2005 Q4	186.97
2006 Q1	188.66
2006 Q2	189.93
2006 Q3	188.11
2006 Q4	186.44

Source : *http://www.macromarkets.com/csi_housing/sp_caseshiller.asp*

Table-3 : New private housing units started, authorized, and completed and houses sold, 1962-2009 (thousands)

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Units Started	1192.7	1013.9	1199.7	1287.6	1457.0	1354.1	1476.8	1474.0	1616.9	1640.9	1568.7	1602.7	1704.9	1847.7	1955.8	2068.3	1800.9	1355.0	905.5	553.8
Units Autho-rized	1110.8	948.8	1094.9	1199.1	1371.6	1332.5	1425.6	1441.1	1612.3	1663.5	1592.3	1636.7	1747.7	1889.2	2070.1	2155.3	1838.9	1398.4	905.4	572.2
Units Comp-leted	1308.0	1090.8	1157.5	1192.7	1346.9	1312.6	1412.9	1400.5	1474.2	1604.9	1573.7	1570.8	1648.4	1678.7	1841.9	1931.4	1979.4	1502.8	1119.7	796.0
Units Sold	534	509	610	666	670	667	757	804	886	880	877	908	973	1,086	1,203	1,283	1,051	776	485	374

Source : Economic Report of President available at http://www.gpoaccess.gov/eop/2011/pdf/ERP-2009.pdf, [Table B-56. New private housing units started, authorized and completed and houses sold, 1962-2009]

Table 4 : Delinquencies

	Prime Loans (Seriously Delinquent) %	Subprime Loans (Seriously Delinquent) %
2004 Q1	0.81	7.72
2002 Q1	0.80	11.81
2002 Q2	0.78	11.63
2002 Q3	0.80	11.92
2002 Q4	0.86	11.49
2003 Q1	0.84	10.48
2003 Q2	0.82	10.35
2003 Q3	0.83	9.10
2003 Q4	0.87	8.33
2004 Q1	0.81	7.72
2004 Q2	0.77	7.05
2004 Q3	0.78	6.47
2004 Q4	0.80	6.52
2005 Q1	0.73	5.96
2005 Q2	0.69	5.81
2005 Q3	0.71	5.68
2005 Q4	0.86	6.32
2006 Q1	0.77	6.22
2006 Q2	0.75	6.24
2006 Q3	0.79	6.78
2006 Q4	0.86	7.78
2007 Q1	0.89	8.33
2007 Q2	0.98	9.27
2007 Q3	1.31	11.38
2007 Q4	1.67	14.44
2008 Q1	1.99	16.42
2008 Q2	2.35	17.85
2008 Q3	2.87	19.56
2008 Q4	3.74	23.11
2009 Q1	4.70	24.88

Source : *Inside Mortgage Finance, The 2007 Mortgage Market Statistical Annual, Key Data (2006), Joint Economic Committee (October, 2007)*

Table 5 : Mortgage Originations and Subprime Securitizations

Year	Total Mortgage Originations (Billions)	Subprime Originations (Billions)	Share of Subprime in Total Originations (%)	Subprime Mortgage Backed Securities (Billions)	Share of subprime mortgages securitized (%)
2001	2215	190	8.58%	95	50.00%
2002	2885	231	8.01%	121	52.38%
2003	3945	335	8.49%	202	60.30%
2004	2920	540	18.49%	401	74.26%
2005	3120	625	20.03%	507	81.12%
2006	2980	600	20.13%	483	80.50%

Source : *Inside Mortgage Finance, The 2007 Mortgage Market Statistical Annual, Key Data* (2006), *Joint Economic Committee* (October, 2007)

Table 6 : Outstanding US Bond Market Debt

$ Billion

Year	Municipal	Treasury	Mortgage Related	Corporate Debt	Federal Agency Securities	Money Markets	Asset-Backed	Total
1996	1261.6	3666.7	2486.1	2126.5	925.8	1393.9	404.4	12265.0
1997	1318.7	3659.5	2680.2	2359.0	1021.8	1692.8	535.8	13267.8
1998	1402.7	3542.8	2955.2	2708.5	1302.1	1977.8	731.5	14620.6
1999	1457.1	3529.5	3334.3	3046.5	1620.0	2338.8	900.8	16227.0
2000	1480.5	3210.0	3565.8	3358.4	1853.7	2662.6	1071.8	17202.8
2001	1603.6	3196.6	4127.4	3836.4	2157.4	2587.2	1281.2	18789.8
2002	1763.0	3469.2	4686.4	4132.8	2377.7	2545.7	1543.2	20518.0
2003	1876.8	3967.8	5238.6	4486.4	2626.2	2519.9	1693.7	22409.4
2004	2000.2	4407.4	5862.0	4801.7	2700.6	2904.2	1827.8	24503.9
2005	2192.1	4714.8	7127.7	4965.8	2616.0	3433.7	1955.2	27005.3
2006	2363.5	4872.3	8452.8	5344.6	2651.3	4008.8	2130.4	29823.7
2007	2580.1	5081.5	8931.4	5946.8	2933.3	4172.0	2472.4	32117.5
2008	2635.3	6082.2	8897.3	6205.1	3207.8	3791.7	2671.8	33491.2
2009	2669.9	6630.8	8856.8	6722.9	3141.4	3580.3	2598.6	34200.7

Source : *www.sifma.org/research/pdf/overall_outstanding.pdf*

Table 7 : Foreign holdings of U.S. long term asset-backed securities as on June 30, 2008 ($ Billions)

Region	Total Long Term ABS	Agency ABS	Corporate ABS		
			Total	MBS	Non-MBS
Africa	304	67	237	43	194
Asia	676088	587452	88636	40623	48014
Caribbean	295319	64815	230504	186613	43891
Europe	515494	103945	411549	215059	196490
Latin America	7005	4101	2904	327	2577
Canada	16752	1561	15191	8098	7093
Others	21248	10597	10651	7611	3040
Total	1532210	772538	759673	458374	301299

Source: Report on Foreign Portfolio Holdings of U.S. Securities (2008). Department of Treasury, Federal Reserve Bank of New York, Board of Governors of the Federal Reserve System.

Table 8 : Foreign holdings of U.S. long term asset-backed securities as on June 30, 2007 ($ Billions)

Region	Total Long Term ABS	Agency ABS	Corporate ABS		
			Total	MBS	Non-MBS
Africa	404	67	337	117	221
Asia	454017	373910	80106	51442	28664
Caribbean	295690	69534	226156	179885	46271
Europe	670408	112584	557824	342011	215813
Latin America	6538	3377	3160	376	2784
Canada	23046	1084	21962	10606	11356
Others	21841	9168	10651	9298	3377
Total	1471944	569724	902220	593735	308486

Source : Report on Foreign Portfolio Holdings of U.S. Securities (2007). Department of Treasury, Federal Reserve Bank of New York, Board of Governors of the Federal Reserve System.

Table-9 : Trends in Structured Finance in India (Rs. Billion)

Type	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
ABS	12.9	36.4	80.9	222.9	178.5	234.2	313.2	135.8	209.7
MBS	0.8	14.8	29.6	33.4	50.1	16.1	5.9	32.9	62.5
CDO/LSO	19.1	24.3	28.3	25.8	21	119	318.2	364.4	145.8
OTHERS	4	2.3	0.5	26	–	–	13	11.6	7.9
TOTAL	36.8	77.8	139.3	308.1	249.6	369.3	650.3	544.7	425.9

Source : Websites of various rating agencies, ICRA, CRISIL, etc.

Intrinsic Value of Share : A Conceptual Discussion

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Abstract : Identification of mispriced securities to facilitate an investment decision is the objective of resorting to fundamental analysis by its users (investors/analysts). Whether a security is mispriced or not depends on the relative position of market price and intrinsic value. Whereas the market price is dependent on the forces of demand and supply operating in the securities market, intrinsic value is dependent on the information available to its user concerned. Success of fundamental analysis is thus dependent on the reliability of the intrinsic value. The present article is an attempt to provide an insight into the intrinsic value—its meaning, need, origin, drivers, components and models for its computations followed by a critical analysis of the same.

Key-words : Fundamental analysis, intrinsic value.

1. Introduction

Fundamental Analysis helps investors/analysts indentify mispriced securities to facilitate an investment decision. The process of identification is—calculation of Intrinsic Value of the security concerned, collection of information as to the market price of the same, and comparing the two, to see whether it is a mispriced one or not. Thus, the success of the process is very much dependent on proper quantification of Intrinsic Value of the security on the basis of qualitative and quantitative information gathered through economy-industry-company analysis.

Price is—what one pays, value is—what one gets, said Buffett quoting Graham (http://www.berkshirehathaway.com/owners.htm). Meaning thereby that market price of a security and the Intrinsic Value of the same need not be equal. Because as Graham, (http://en.wikipedia.org/wiki/Benjamin_Graham) points out, in the short term, the stock market behaves like a voting machine, but in the long term it acts like a weighing machine (i.e. its true value will be reflected in the long run).

Concept

Black's Law Dictionary defines Intrinsic value of a thing as its true, inherent, and essential value, not depending upon accident, place, or person, but the same everywhere and to everyone. (http://thelawdictionary.org/intrinsic-value/)

The price that is justified for a share when the primary factors of value are considered. In other words, it is the real worth of the stock, as distinguished from the current market price of the stock. It is a subjective value in the sense that the analyst must apply his own individual background and skills to determine it, and estimates of intrinsic value will vary from one analyst to the next (Hampton,1979).

In intrinsic valuation, one values an asset based upon its intrinsic characteristics. It is the value that one would attach to an asset, based upon its fundamentals: cash flows, expected growth and risk.

The essence of intrinsic value is that one can estimate it in a vacuum for a specific asset, without any information on how the market is pricing other assets (Damodaran, 2011, 2012). Intrinsic Value as, the worth of an investment that is justified by the information about its payoffs. (Penman, 2007)

Chartered Financial Analyst Institute states that intrinsic value is the value that, an investor considers on the basis of an evaluation of available facts, to be the true or real value that will become the market value when other investors reach the same conclusion. (http://www.bwts.com.au/download/articles/nl-114-intrinsic-value.pdf)

The important points arising from this definition—1) Intrinsic Value so calculated is specific to the individual performing the calculation. Buffett says, "Two people looking at the same set of facts, will almost inevitably come up with at least slightly different intrinsic value figures," is due to a difference in opinion of the future cash flows. Since some investors are more conservative than others, their estimates of book value growth or dividend payments may be lower. This will immediately change the intrinsic value. (http://www.berkshirehathaway.com/owners.htm), 2) the definition assumes that value can differ from the market price.

Buffett defines Intrinsic Value as the discounted value of the cash that can be taken out of the business during its remaining life. As per his understanding intrinsic value of a business is its true value not accounting/book value. In order to arrive at intrinsic value one has to take the expected future cash flows and discount them back to their present value. Such calculation should also consider tax and margin of safety, he opined. (http://www.berkshirehathaway.com/owners.htm)

Need for Computation of Intrinsic Value

Hedonism says that pleasure is the only thing with positive Intrinsic Value. To an investor pleasure in investment is there as long as that investor enjoys a margin of safety i.e., market price of the security is less than its Intrinsic Value.

An asset is a promise to a stream of future payoffs. The demand for an asset is dependent on the stream of expected payoff from the same. The acquisition of a financial asset involves sacrificing current consumption for future payoffs. It is the asset that appreciates the most and thus delivers the most future consumption for today's sacrifice. Therefore choosing the right asset depends on its Intrinsic Value.

The fundamental premise of Intrinsic Value is that the prices quoted on stock exchanges around the world do not necessarily reflect the true value of the underlying businesses. The intrinsic value of a stock reflects the actual value of the stock. While the price of a stock fluctuates even within a very short period of time, the intrinsic value of a stock is considered fixed within a very short period of time.

The calculation of Intrinsic Value lies at the heart of Value Investing-enabling value investors to buy listed assets for less than they believe they are really worth.

Intrinsic Value investing brings critical risk management discipline to the stock selection process. The philosophy of buying under-priced security serves at the same time, both generating returns and limiting risk. Buying stocks cheap provides a guard against losing a lot of money.

Value Drivers

Intrinsic value drivers refer to factors relating to a company's growth, margins on investments made and/or cost of capital, as these are the factors that drive intrinsic value (Koller et al, 2005). When talking about equity, one can make assumptions of the future development of these intrinsic valuation factors and estimate future cash flows for the underlying company and thereby estimate an intrinsic value of the equity.

Components

Four earnings factors are the major components of the intrinsic value of a going concern.

1. Level of normal earning power and profitability in the employment of assets as distinguished from the reported earnings, which may be, sand frequently are, distorted by transient influences.
2. Dividends actually paid or the capacity to pay such dividends currently and in the future.
3. A realistic expectation about the trend line growth of earning power.
4. Stability and predictability of these quantitative and qualitative projections of the future economic value of the enterprise.

In capitalizing these earning power components, the valuation process involves the derivation of a risk premium, relative to an assured flow of returns, based on the following:

1. Variability of expected returns around trend line returns, reflecting industry factors, operating and financial leverage, creditworthiness, and nonfinancial elements.
2. Positive value of growth potential derived from definite prospects such as new products, new markets, and external economic and social developments.
3. Informed and experience based appraisal of management's ability to cope with the uncertainties and unpredictable events of the long term future.

In essence, the intrinsic value of the firm is its economic value as a going concern, taking account of its characteristics, the nature of its business(es), and the investment environment. (Graham and Dodd, 1989).

2. History of Intrinsic Value Calculation

An early reference to attempts to determine the fair value for exchange traded equities can be found in Joseph de la Vega's 1688 book, "Confusion de Confusiones". De la Vega tells us that he based his investment decisions upon "calculations" and as input to these calculations he used "prospective dividends". Thus De la Vega, who traded shares on the Amsterdam Exchange over 320 years ago, was giving consideration to a potential difference between market price and fair value. But De la Vega's book was written in Spanish. In order to find early reference to the English word "Intrinsic" (or Intrinsick as it was then spelt) we must turn to English writings. An early English application of the term "Intrinsic Value", to traded shares, can be found in Thoughts on Trade's 1716 book, "Thoughts on Trade". The concept of discounted cash flow, which underpins the methodology of most Intrinsic Value calculations, significantly predates trading in publicly listed shares. The first listed company,

The Dutch East India Company, was floated in 1602. But it was exactly 400 years earlier, in 1202, that we find the first written reference to discounted cash flow calculations. They were described in Leonardo Pisano's book, "Liber Abaci"—it's title translates to "A Book of Calculation". Pisano meant for his mathematics to be applied to annuities, bonds and other contractual cash flows. But in attempts to determine the Intrinsic Value of shares analysts have subsequently applied his mathematics to the less quantifiable forecasts of future company earnings. (Kemp, 2011).

3. Models for Computation of Intrinsic Value

Stock price is the sum of the price of realized events and the price of expectation of future events, which influence company's future cash flows. This can be described as

$$\text{Price}_{\text{stock}} = \text{Price}_{\text{realized events}} + \text{Price}_{\text{expectations}}$$

Decomposing price of expectation, Price of stock becomes

$$\text{Price}_{\text{stock}} = \text{Price}_{\text{realized events}} + \text{Price}_{\text{rational expectation}} + \text{Price}_{\text{irrational expectation}}$$

where *Price realized* events is price based on past events (e.g., accounting information), *Price rational expectation* is the price of expectation based on market or company fundamentals, and *Price irrational expectation* is the price of expectation not based on fundamentals (e.g., rumor, discontinuous information, and bubble and bust).

The intrinsic value can be described as,

$\text{Price}_{\text{stock}} = (\text{Price}_{\text{realized events}} + \text{Price}_{\text{rational expectation}})$, assuming $E(\text{Price}_{\text{irrational expectation}}) = 0$ in the long term

Many underpriced and overpriced stocks are in the securities market. In order to determine undervalued, correctly valued and overvalued stocks the intrinsic values of stocks calculated using a certain model are compared with the current market price of a stock. Based on this calculation, an investment decision is put forward, recommending buying or selling the stock.

There are several models that can be used to determine an intrinsic value of a stock. Penman, (2007), defines four methods of valuation that involve forecasting.

i. Dividend Discounting Analysis that discounts the dividends from a company,
ii. Discounted Cash Flow Analysis that discounts free cash flow to investors,
iii. Residual Earnings Analysis that calculates the value as the book value plus residual earnings and finally
iv. Earnings Growth Analysis that calculates value as capitalized earnings plus the present value of expected abnormal earnings growth.

Hellman (2000) talks about different valuation attributes; dividends, residual earnings, and free cash flow that are involved in the three fundamental valuation models he mentions.

Dividend Discount Model (DDM)

According to theory, shareholders receive cash payoffs in the form of dividends. The Dividend Discount Model (DDM) values equity by forecasting and discounting future dividends at the cost of equity capital. By definition DDM can be viewed through equity perspective:

$$Value\ of\ Stock = \frac{Div_1}{(1+r)^1} + \frac{Div_2}{(1+r)^2} + \ldots \frac{Div_n}{(1+r)^n}$$

Where:

Div = Dividends expected in one period

r = Required rate of return

One variety of this model is, the Gordon Growth Model, which assumes that the company under consideration is within a steady state — i.e., with growing dividends in perpetuity. It is expressed as the following:

$$Value\ of\ Stock = \frac{DPS_1}{R_e - G}$$

Where:

DPS_1 = Expected dividends one year from the present

R = Required rate of return for equity investors

G = Annual growth rate in dividends in perpetuity

As ~~the~~ name implies, it accounts for the dividends that a company pays out to shareholders reflecting on the company's ability to generate cash flows. There are multiple variations of this model, each of which is based on different variables depending on the underlying assumptions made for the purpose.

Discounted Cash Flow Model

At its core, if one stay true to principles, a discounted cash flow model is an intrinsic valuation model, because one is valuing an asset based upon its expected cash flows, adjusted for risk. Only assets that are expected to generate cash flows can have intrinsic values. (Damodaran, 2011)

Independent of its book value or market value, the intrinsic value of a firm's equity is calculated through a discounted cash flow (DCF) valuation. A DCF valuation computes a firm's annual projected cash flow for a number of years at its current value—essentially as a quantification of potential performance. Using a firm's weighted average cost of capital (WACC)—the return a firm must earn on the money it has borrowed—DCF weights each annual cash flow projection to give it a current theoretical value.

The most common valuation method used in finding a stock's fundamental value is discounted cash flow (DCF) analysis. In its simplest form, it appears as stated below :

$$DCF = \frac{CF_1}{(1+d)^1} + \frac{CF_2}{(1+d)^2} + \ldots \frac{CF_n}{(1+d)^n}$$

Where:

CFn = Cash flows in period n. d = Discount rate, Weighted Average Cost of Capital (WACC)

The Discounted Free Cash Model (DCF) is based on the insight that dividends can be recast as Free Cash Flows to both Equity and Entity, depending on the valuation approach. DCF assumes that free cash flows represent value better than dividends over a short horizon. Free Cash flows equal the cash available to the enterprise after all required investments

The DCF model uses free cash flows to determine a fair value for a stock. Free cash flow—that is, cash flow where net income is added with amortization/depreciation, and changes in working capital and capital expenditures are subtracted. It also utilizes WACC as a discount variable to account for the time value of money.

Residual Income Model

Another such method of calculating this value is the residual income model, which expressed in its simplest form is :

$$Value\ of\ Stock = B_0 + \sum_{n=1}^{\infty} \frac{(ROE_n - r)B_{n-1}}{(1+r)^n}$$

Where:

B_0 = Current book value per share

B_n = Expected book value per share at n

ROE_n = Expected EPS

r = Required rate of return on investment

What is important to consider is how this valuation method derives the value of the stock based on the difference in earnings per share and per-share book value (in this case, the security's residual income), to come to an intrinsic value for the stock. Essentially, the model seeks to find the intrinsic value of the stock by adding its current per-share book value with its discounted residual income (which can either lessen the book value, or increase it.)

Earnings Growth Model

The AEG model was first introduced by Ohlson and Juettner-Nauroth (2004) and Ohlson (2005). As a consequence it is also called OJ model. The model for valuing earnings growth anchors the valuation on capitalized earnings and then adds value from anticipated growth:

Value of equity = Capitalized forward earnings + Extra value for abnormal cum-dividend earnings growth.

$$V_0^E = \frac{Earn_1}{pE-1} + \frac{1}{pE-1}\left[\frac{AEG2}{PE} + \frac{AEG3}{PE2} + \ldots\ldots\right]$$

Where

Earn = Earnings

PE = Price earnings ratio

AEG = Abnormal (cum-dividend) Earnings Growth

4. Criticisms

Intrinsic Value is the backbone of fundamental analysis, which relies on the assumption that the price on the stock market may not fully reflect a stock's "real" value. This very assumption forms the basis for its criticism. The critiques argue that the market will misprice a security if all the information is not taken care of. The proponents of Efficient Market Hypothesis (EMH) hold that the market is fully aware of all the information ("informationally efficient") and price reflects all publicly available information. Therefore, price instantly changes to reflect new public information not only that, the price instantly reflects even hidden or "insider" information. Hence it is impossible to produce market-beating returns in the long run.

Now the question arises, does price reflect value? The answer depends on who is asked, Warren Buffett, one of the most successful investors in history and a fundamentalist or Professor Eugene Fama, a distinguished finance academic. Buffett and Fama represent different schools of thoughts. On one hand, Buffett believes an investor can find undervalued stocks if he or she looks hard enough. On the other hand, Fama argues the prices of stocks reflect their fair values. But, neither of these successful individuals is dismissing the other's views on markets entirely. Buffett recognises that markets are efficient most of the time; and Fama admits that there is something beyond luck behind Buffett's extraordinary success in his investments. (http://www.investeem.com)

5. Conclusion

Equilibrium situation, for a security, arises when the market price of a security is equal to its Intrinsic Value. So, the investor becomes indifferent between buying and selling a stock. If a stock is in equilibrium, there is no fundamental imbalance, hence no pressure for a change in the stock's price. At any given time, most stocks are reasonably close to their Intrinsic Value and thus are at or close to equilibrium. However, at times stock prices and equilibrium values are different; in such a situation stocks can be temporarily undervalued or overvalued.

Some mistakenly consider value investing a mechanical tool for identifying bargains. But, it is actually a comprehensive investment philosophy that emphasizes the need to perform in-depth fundamental analysis, pursue long-term investment results, limit risk and resist crowd psychology. (Klarman, 2008).

Intrinsic Value is a concept masquerading as a number. There is no unique method of Intrinsic Value determination to suit all circumstances. Its determination is both an art and a science. The inputs are based on judgment and the process is far more subjective than many people acknowledge. (Kemp, 2011). It is an estimate of a stock's "true" value based on available risk and return data. It can be estimated but not measured precisely. A stock's market price is based on perceived but possibly incorrect information. Thus one can see that a stock's "true" long-run value is more closely related to its Intrinsic Value rather than its market price.

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Association between Mutual Fund Investments and Stock Returns : A Study of Some Select Mutual Fund Schemes in India

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Abstract : A Mutual fund is a financial intermediary that pools the savings of investors for collective investment in a diversified portfolio of securities. The mutual fund concept was introduced in India with the setting up of unit trust of India (UTI) in 1963, but its relevance is gaining importance today as investors can access Indian stock market via investing in mutual fund which in turn has considerable effect on stock prices of listed securities under NSE & BSE. Domestic mutual funds are found to determine their investment flows on the basis of their own previous investments, Foreign Institutional Investments (FII) as well as stock market returns. In the above context, the paper highlights the association between mutual fund investments and stock returns of some BSE listed companies.

Key-words : Mutual Fund, assets under management, stock return, mutual fund investment sector, mutual fund portfolio companies.

1. Introduction

In financial market the most important component is stock market. On the other hand mutual fund is related with non-banking financial institutions. Mutual Fund is one of the most preferred investment alternatives for small investors as it offers an opportunity to invest in a diversified, professionally managed portfolio at a relatively low cost. Mutual Fund is a trust that pools the savings of a number of investors who share a common financial goal. In recent times, an emerging trend in Indian mutual fund industry is its huge investment in Indian stock market mainly National Stock Exchange (NSE) and Bombay Stock Exchange (BSE). It is generating momentous investment growth in stock market. With emphasis of increase in domestic savings and improvement in market mechanism, the need and scope for mutual fund operations have increased tremendously. However the broad investment sectors of mutual fund industry are as follows:

1. *Equity Pharmaceutical* : Equity mutual fund schemes with an investment objective to invest in pharmaceutical, healthcare and related sector.
2. *Equity FMCG* : Equity mutual fund schemes with an investment objective to invest in fast moving consumer goods sector.
3. *Equity Small and Mid Cap* : Mutual funds which diversify investments in between mid and small cap companies are termed as mid and small cap funds. The proportion of investments between midcap and small cap may vary from fund to fund.
4. *Equity Multi Cap* : It is an excellent approach where scheme's portfolio diversification contains various levels of risk through investing in small, mid and large cap companies.
5. *Equity Large Cap* : Equity mutual fund schemes which primarily invest in stocks of blue chip companies with above average prospects of earning growth.

6. *Equity Banking*: Equity mutual fund schemes with an investment objective to invest in banking sector.
7. *Equity Technology*: Equity mutual fund schemes with an investment objective to invest in technological sector.
8. *Equity Large and Mid Cap*: Equity mutual fund schemes with an investment objective to invest in large and mid cap companies.
9. *Equity Tax Planning* : These schemes offer tax rebates to the investors under specific provisions of the Income Tax Act, 1961 as the Government offers tax incentives for investment in specified avenues.
10. *Equity Infrastructure* : Equity mutual fund schemes with an investment objective to invest in infrastructure sector.

Volatility is fluctuation or change in stock price. Volatility of a stock measures the frequency with which changes in its market price take place over a period of time. If a stock is highly volatile i.e. there are large fluctuations in its market price, there is a risk and investors avoid such shares. Hence, volatility is a factor which is taken into consideration when assessing the risk return tradeoffs. Volatility is caused by a number of factors such as speculation, the trading and settlement system, capital inflow and outflow, inflation, the government budget, rumors, political changes etc. Whereas, return on stock represents combination of dividends and change in stock's price over a time period.

In recent years, the study of causality between mutual funds investment flows and stock market returns has drawn the attention of researchers and academicians world over. Accordingly, a study on the association between mutual fund investments and stock returns has been taken up in this paper.

The study is divided into six sections. Literature review is discussed in Section-II. Section-III deals with the objective of paper. Research methodology is highlighted in Section-IV. Section-V discusses the analysis and findings. Section-VÉ concludes the study.

2. Literature Review

The particular interest of this study is to analysis the association between mutual fund investments and stock returns of selected companies listed under BSE. Direct evidence in this area is scarce. But there is a number of indirect related evidence in this area. *Warther (1995)* used granger causality test to find out association between mutual fund investments and stock returns. He argues that shocks to security returns lead to change in mutual inflows, which in turn leads to a further change in security returns. The existing literature focuses on the effect of mutual fund investment on overall market return, not on individual stock return. Moreover in recent years, considerable numbers of studies have been looked into the impact of institutional trading on stock market return. It is often said that mutual funds flow causes security returns to rise and fall and one reason may be attributed for this is the price pressure hypothesis (*Harris et 1986*; *Shleifer 1986*). This theory suggests that increased flow into equity mutual funds stimulate a greater demand by individuals to hold stock and this cause stock price to rise. *Scharfstein and Stein (1990)* documented that when mutual fund buys a stock in destabilizing manner, price tends to increase followed by a decrease. This change in

price affects the stock returns. Whereas *Hirshleifer et al. (1994)* documented that if mutual fund buys a stock in stabilizing manner, price tends to increase without a subsequent decrease. This change in price affects the stock returns too. *Remelona et al., (1997)* also used a similar methodology as *Warther's* (1995) to examine the effects of market returns on aggregate fund flows. They found that unexpected equity fund flows are not affected by stock returns but bond flows are affected by returns. *Potter and Schneeweis (1998)* in their study had made an attempt to investigate the factors which affect aggregate mutual fund flows. They found competing investment classes to be economically and statistically significant explainers of aggregate mutual fund flows. The results also show that factors impacting flows to riskier groups differ from the factors determining flows to less risky categories among equity sub-categories. They also documented that securities returns are useful for predicting mutual fund flow to growth funds. *Edwards and Zhang (1998)* employed Granger causality test and instrumental variable analysis to examine the relationship between aggregate monthly mutual fund flows and stock and bond monthly returns. The result shows that with one exception, flows into stock and bond funds do not affect either stock or bond returns. *Fortune (1998)* used VAR models with seven variables and monthly data for the period January 1984 through December 1996 to examine the relationship between fund flows and returns. The results provided evidence of positive correlation between fund flows and returns. However, the results show that security returns do affect future fund flows, but some fund flows do affect future security returns. Overall, the evidence on causal relationship between stock returns and mutual fund flows is mixed. *Edelen and Warner (2001)* observed that aggregate unexpected mutual fund flow is positively correlated with concurrent market returns at daily frequency. They also found that causality from flow to returns within a day and one day lagged response of aggregate flow to market returns. *Papadamou and Siriopoulos (2002)* used similar methodology as *Warther's (1995)* to examine the effect of market returns on aggregate fund flows using monthly data from the Greek equity mutual fund investing spanning January 1998 to March 2002. The result shows that there is small positive concurrent relation between unexpected net flows and market returns, which the author attributed to information revelation. The results also suggest some evidence that mutual fund flows cause prices to rise and fall. The author finally concludes that there is low correlation between fund flows and returns. In another related study, *Massa (2003)* has studied the US equity mutual fund market over a period of 20 years and found that the presence of more and relatively less informed funds affects the market; increasing the liquidity and reducing the volatility and prices. He has identified the fund characteristics and has related them to volatility, liquidity, return cross-correlation and prices of stocks that are held by the funds. *Alexakis et al. (2005)* examined the interaction between mutual fund flows and stock returns in Greece. He documented the bi-directional causality between mutual fund flows and stock returns because mutual fund flows cause security returns to rise or fall. *Oh and Parwada (2007)* analysed relations between stock market returns and mutual fund flows in Korea. The results shows that there is significant positive correlation between stock return and both purchase and sales by mutual funds.

Hence the present study distinguishes itself from prior studies in several ways. Firstly, this study in Indian context places emphasis on stock returns of some select individual companies listed in BSE. Secondly, the study considers both the private and public sector mutual fund schemes. Thirdly, the study focuses on Indian capital market namely BSE where association between mutual fund investments and stock returns is intense. Thus the study aims at fulfilling the research gap regarding

association between mutual fund investments and stock returns of individual companies in Indian context.

3. Objective of the Study

The main objective of study is to examine the association between mutual fund investments and stock returns of some BSE listed companies.

4. Research Methodology

a) Sample Selection: The ten investment sectors of mutual fund industry as published by Value Research India Private Ltd. in their official website on 06/08/2012 have been selected. In each sector there are many mutual fund schemes as published by Value Research India Private Ltd. They make ranking of mutual fund schemes based on return of the schemes. Since return of schemes changes each day, the ranking of schemes are also changes each day. In this study, the rank one mutual fund scheme from each of ten sectors has been selected as published by Value Research India private Ltd. on 06/08/2012, thereby resulting into selection of ten schemes. Now, each mutual fund scheme has its own portfolio (i.e. the companies in which the mutual fund company has made its investments). From each scheme two portfolio companies are selected resulting into twenty companies (10 schemes times 2 companies) for the study (after taken into consideration that the scheme retain its investment in the company during the period of fifteen month from 1.4.2011 to 31.06.2012). The twenty sample companies for the empirical study are listed in ***Appendix A***. All the sample companies are listed on the stock exchange, Mumbai (BSE).

Thus the sampling technique becomes multistage sampling method as shown below:

Selection of Mutual Fund Investment Sectors

↓

Selection of Top Mutual Fund Scheme from each Mutual Fund Investment Sectors (Ten Schemes)

↓

Selection of two Mutual Fund Portfolio Companies from Each Scheme (Twenty sample companies)

b) Consideration of time period: In order to examine the association between mutual fund investments and stock returns of sample companies, a period of fifteen months ranging from April 2011 to June 2012 have been considered and relevant data i.e. closing month-end stock price and month-end portfolio investments of mutual fund schemes have been obtained from secondary sources such as BSE website and newspapers like Business Standard, Business Line etc.

c) Collection of data: The empirical part deals with relation between mutual fund investment and stock return. This part of the study is primarily based on secondary data like information published in Association of Mutual Funds in India (AMFI), their quarterly reports, information relating to portfolios of sample mutual fund schemes published in mutual fund company's website, stock market information published in newspaper like the Economic Times and available in websites of stock exchanges (mainly BSE).

d) Application of statistical methods: The analysis & interpretation of data is done statistically. Mutual fund investments into the Sample Companies are collected from factsheets of the respective mutual fund schemes. The change in mutual fund investment and change in stock return over the sample period of sample companies is determined taking into consideration the natural logarithm (ln).

The degree of association i.e. correlation coefficient between the said variables is determined for each of the sample companies. A regression analysis is also done at 5 percent significance level with change in mutual fund investment as the independent variable and change in stock return as the dependent variable first and then vice versa.

5. Analysis and Findings

The analysis and interpretation of available data for the sample companies are presented below through statistical analysis.

Table-1

Correlations of Sample Companies Stock Returns with Change in Mutual Fund Investment

Sample Companies	Correlation Coefficients (r_{xy})
Cipla Ltd.	-0.152738299
Drreddy Laboratories Ltd.	0.454687767
ITC Ltd.	0.273687568
Glaxosmithkline Cons. Healthcare Ltd.	-0.20944
Page Industries Ltd.	0.394719
Hawkins Cookers Ltd.	0.691987
ICICI Bank Ltd.	0.444339
Nestle India Ltd.	0.505393
ICICI Bank Ltd.	0.284837
Reliance Industries Ltd.	0.627928
ICICI Bank Ltd.	0.436476
HDFC Bank Ltd.	0.080107
Infosys Ltd.	-0.55089
Tata Consultancy Services Ltd.	-0.23677
Bajaj Auto Ltd.	0.625585
Housing Development Finance Corporation Ltd.	0.495833
Bajaj Auto Ltd.	0.682075
HDFC Bank Ltd.	0.392674
Reliance Industries Ltd.	0.834657
Larsen & Toubro Ltd.	0.27086

Regression Analysis

Out of twenty companies, 16 companies have shown positive correlation between changes in stock return and change in mutual fund investment. Whereas rest of the 4 companies have shown negative correlation between change in stock return and mutual fund investment. Four regression equations run at 95% confidence intervals which are developed as follows:

1. $y = a + bx$ (considering all 16 companies which show positive correlation between change in stock return and change in mutual fund investment)

   where

   y = Dependent variable i.e. changes in stock return

   x = Independent variable i.e. changes in mutual fund investment

2. $y = a + bx$ (considering all 16 companies which shows positive correlation between change in stock return and change in mutual fund investment)

   where

   y = Dependent variable i.e. change in mutual fund investment

   x = Independent variable i.e. change in change in stock return

3. $y = a + bx$ (considering all 4 companies which shows negative relation between change in mutual fund investment and change in stock return).

   where

   y = Dependent variable i.e. change in stock return

   x = Independent variable i.e. change in mutual fund investment

4. $y = a + bx$ (considering all 4 companies which shows negative correlation between change in stock return and change in mutual fund investment)

   where

   y = Dependent variable i.e. changes in mutual fund investment

   x = Independent variable i.e. change in changes in stock return

The regression results are presented below:

a) 16 companies which showing positive correlation between changes in stock return and changes in mutual fund investment.

   Dependent variable: changes in stock return

   Independent variable: changes in mutual fund investment

   Number of observations = n = 240 (15 months*16 companies)

Table-2

Regression analysis of 16 companies which show positive correlation between change in stock return and change in mutual fund investment considering change in stock return as dependent variable

Model	Coefficients		Significance Level (p-value) at 95% Confidence Interval	95% Confidence Interval for B	
	B	Standard Error		Lower Bound	Upper Bound
Constant Change in mutual fund investment	-.017.255	.011.068	.118.000	-0.039.120	.004.389

Adjusted R^2 = .052

Significant F = .000

- *Model's Explanatory Power-* Here adjusted R^2 is 5.2% which is very low and indicates that change in stock return can be explained by independent variable only up to 5.2% as stock return of a company depends on a number of factors.
- *Statistical Significance-*Here p-value of independent variable is .000 which is less than .005 i.e. for regression run at 5% level of significance. This suggests that change in mutual fund investment is a significant determinant of change in stock return for positive correlation companies.

b) All 16 companies which showing positive correlation between changes in stock return and changes in mutual fund investment.

Dependent variable : changes in mutual fund investment

Independent variable : changes in stock return

Number of observations = n = 240 (15 months*16 companies)

Table-3

Regression analysis of 16 companies which show positive correlation between change in stock return and change in mutual fund investment considering change in mutual fund investment as dependent variable

Model	Coefficients		Significance Level (p-value) at 95% Confidence Interval	95% Confidence Interval for B	
	B	Standard Error		Lower Bound	Upper Bound
Constant Change in stock price (stock return)	.027.218	.010.058	.007.000	.007.103	.047.333

Adjusted R^2 = .052

Significant F = .000

- *Model's Explanatory Power*—Here adjusted R^2 is 5.2% which is low and same as that in previous case thereby indicating that change in mutual fund investment can be explained by change in stock return only up to 5.2% as mutual fund flow depends on a number of factors other than stock return which have not been factored in this study.
- *Statistical Significance*—Here p-value of change in stock return is .000 i.e. less than .005 meaning there by that change in stock return is significant in determining mutual fund flow for positive correlated companies.

c) All 4 companies which showing negative correlation between changes in stock return and changes in mutual fund investment

Dependent variable: changes in stock return

Independent variable: change in mutual fund investment

Number of observations = n = 60 (15 months*4 companies)

Table-4

Regression analysis of 4 companies which show negative correlation between change in stock return and change in mutual fund investment considering change in stock return as dependent variable

Model	Coefficients		Significance Level (p-value) at 95% Confidence Interval	95% Confidence Interval for B	
	B	Standard Error		Lower Bound	Upper Bound
Constant Change in mutual fund investment	-.001-.042	.008.030	.906.168	-.016-.102	.014.018

Adjusted R^2 = .033

Significant F = .168

- *Model's Explanatory Power*—Here adjusted R^2 is 3.3%. Such a low explanatory power implies that change in stock return is affected by number of factors other than mutual fund investment which have not been factored in this study.
- *Statistical Significance*—Here p-value of independent variable is .168 which is more than .005 i.e. it shows change in mutual fund investment is not significant in determining change in stock return for negative correlations companies.

d) All 4 companies which showing negative correlation between changes in stock return and change in mutual fund investment

Dependent variable: changes in mutual fund investment

Independent variable: change in stock return

Number of observations = n = 60 (15 months*4companies)

Table-5

Regression analysis of 4 companies which show negative correlation between change in stock return and change in mutual fund investment considering change in mutual fund investment as dependent variable

Model	Coefficients		Significance Level (p-value) at 95% Confidence Interval	95% Confidence Interval for B	
	B	Standard Error		Lower Bound	Upper Bound
Constant Change in stock price (stock return)	-.024-.778	.033.557	.474.168	-.090-1.893	.042.337

Adjusted $R^2 = .016$

Significant $F = .168$

- *Model's Explanatory Power*—Here adjusted R^2 again very low i.e. 1.6% only. This indicates that change in mutual fund investment can be explained by independent variable only up to 1.6% as mutual fund flow depends on a number of other factors which have not been factored in this study.
- *Statistical Significance*—Here p value of independent variable is .168 i.e. more than .005 for regression runs at 5% level of significance. Thus change in stock return is insignificant in determining change in mutual fund investment.

  The empirical results suggest that the correlation between changes in mutual fund investments and stock returns is positive for Dr. Reddy Laboratories Ltd, ITC Ltd, Page Industries Ltd., Hawkins Cookers Ltd., ICICI Bank Ltd., Nestle India Ltd., Reliance Industries Ltd., HDFC Bank Ltd., Bajaj Auto Ltd., Housing Development Finance Corporation Ltd., Larsen and Toubro Ltd. and negative for Cipla Ltd., Glaxosmithkline Cons. Healthcare Ltd., Infosys Ltd. and Tata Consultancy Ltd.

An interesting observation can also be made from the regression analysis that booth way significance between mutual fund investments and stock returns has been noticed in positive correlations cases i.e. stock returns have been found to significantly determined mutual fund investment and vice-versa. But there has been statistical insignificance between stock returns and mutual funds in both directions for negative correlations.

6. Conclusion

The concept of mutual fund investment in Indian stock market is gaining importance day by day. Investment of mutual funds in stock market keeps on increasing rapidly. There are lots of empirical literatures on the relationship between mutual fund flow and stock market return. But the literatures related to relationship between total mutual fund flow and stock individual return are not well documented in Indian and International context. In this backdrop, the present study has examined the association between the specific mutual fund investments schemes and stock return of schemes' selected portfolio companies.

It has been established through case study that there are both positive and negative correlations between Mutual Fund flows & stock return. However the study suffers from the following limitations:

1) The mode of sample and size of the sample are important parameters for any empirical study. Only 10 Mutual Fund schemes are selected for study but there are 46 Mutual Fund Companies operating in India and each of them offer a variety of diversified schemes. Again only two portfolio companies of each scheme have been selected from a number of portfolio companies. A better association between the two variables could have been established, if sample size been large.
2) The time period considered for the study is 15 months. A better conclusion could have been drawn if longer time periods have been considered, say 10 years for this study.

There are other aspects of this study which can be focused upon. The areas where future research can be carried out are as follows:

1) The highest correlation between two variables is 0.834657 which is from infrastructure investment sector of mutual fund. So, a further broad study could be carried on taking into consideration only the infrastructural mutual fund schemes & its effect on stock price of those schemes portfolio companies.
2) Here the explanatory power of independent variable is very low, so it is recommended to consider all factors as stated earlier while studying on association between mutual fund investment & stock market returns.

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Appendix-A

Investment Sectors of Mutual Fund	Sample Companies	Selected Schemes
Equity Pharmaceuticals	SBI Magnum Pharma Fund	1. CIPLA Ltd 2. Drreddy Laboratories Ltd
Equity FMCG	SBI Magnum Fmcg Fund	1. ITC Ltd 2. Glaxosmithkline Cons. Healthcare Ltd.
Equity Small And Mid Cap	SBI Magnum Emerging Business Fund	1. Page Industries Ltd. 2. Hawkins Cookers Ltd
Equity Multi Cap	SBI Multiplier Plus	1. ICICI Bank Ltd 2. Nestle India Ltd
Equity Large Cap	ICICI Prudential Top 100 Fund	1. ICICI Bank Ltd 2. Reliance Industries Ltd
Equity Banking	ICICI Prudential Banking & Financial Services Fund	1. ICICI Bank Ltd 2. HDFC Bank Ltd
Equity Technology	ICICI Prudential Technology Fund	1. Infosys Ltd 2. Tata Consultancy Services Ltd
Equity Large And Mid Cap	Quantum Long Term Equity	1. Bajaj Auto Ltd 2. Housing Development Finance Corporation Ltd
Equity Tax Planning	Quantum Tax Saving	1. Bajaj Auto Ltd 2. HDFC Bank Ltd
Equity Infrastructure	DSP Blackrock India T.I.G.E.R. Fund	1. Reliance Industries Ltd 2. Larsen & Toubro

The Role of Self-Help Groups (SHGs) in Poverty Alleviation in Rural West Bengal : A Study on Some Selected Districts

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Abstract : In today's age of LPG, riches are given opportunities to be richer and the poor are sidelined labeling them as unfit. 'Trickle down effect' as believed to solve their problems being failed, the question of 'inclusive growth' has gradually surfaced. A good number of Micro-Finance Programs have been launched therefor and SHGs are one of the instruments in this respect. West Bengal was late in initiating the SHG program, no doubt, but now it has surpassed even the southern states in terms of growth rate of SHGs. In this context, it is highly pertinent to see how they are working towards their basic objective, i.e., alleviating the poverty, particularly in rural area of West Bengal. The present study is an attempt in that direction.

Key-words : SHG, poverty alleviation, inclusive growth, financial inclusion, economic inequality.

1. Self-Help Groups (SHGs)

Self-help is the best help. God helps them who help themselves. These sentences are no longer the morals of some fables only. Rather, they have been the main mission of rural masses today to reduce, if not to remove fully, the pains of poverty in their life. The poor masses have come together voluntarily to save small amounts regularly, to contribute to a common fund and to meet their emergency needs thereby on mutual help basis. The groups so formed are called Self-Help Groups (SHGs) that use collective wisdom and peer pressure to ensure proper use of credit and timely repayment thereof. Thus, they have been able to provide primitive banking service to them who were so long unbanked by the so-called formal financial sector.

Stray examples of such SGHs were almost in all countries since the time immemorial, though they were in different names at different places and times. In India they started gaining recognition far since the 1980s when, for many a reason, micro-financing movement took the form of a revolution and the SHGs were considered to be an effective delivery channel of micro-finance throughout the country.

Now in West Bengal there are as many as nearly 7,00,000 SHGs of which–

a. 2,00,000 have been formed under Swarnajoyanti Gramin Swarojgar Yogana of the government,
b. 3,00,000 (approx.) have been formed by the NABARD (National Bank for Agriculture and Rural Development),
c. around 1,50,000 have been formed by the PACS (Primary Agricultural Co-operative Society),
d. another 50,000 have been formed by the SIDBI (Small Industries Development Bank of India).

Over and above the aforesaid SHGs, non-banking financial corporations like Bandhan have also the notable contributions today towards the formation and nurture of SHGs in West Bengal. Along with them, at present, around 25 lakh micro finance institution (MFI) clients are there in West Bengal. In view of the growth of this huge number of SHGs in rural Bengal, its economy has no doubt got a new dimension. So, it has been pertinent to assess the impact of such SHG related activities on poverty alleviation of rural West Bengal.

2. Socio-Economic Profile of West Bengal

West Bengal is situated in the eastern part of India and so it belongs to the Eastern Region of the country. The Eastern Region being the second poorest region (after the North-eastern region) of the country, West Bengal can be considered as one of the poorest states. The state has been, again, the home of the largest proportion of the Scheduled Caste population (9.7% of the total SCs in India) and Muslims (14.8% of the total Muslims in India). 61% of its population reside in rural areas and the rural economy of West Bengal still depends largely on agriculture. In terms of population, it ranks fourth, whereas area-wise its position is 12th. So the population density is the highest here. All India population density is 324, whereas in West Bengal that is as much as 1028. The migrants from the neighbouring states and Bangladesh have again made this state further overcrowded. In spite of all these, West Bengal is always fighting neck to neck to reach or beat the national average in terms of all the socio-economic parameters. Minimum wage rate here is as much as Rs. 98 (lower than only Nagaland and Meghalaya). Rural inequality index here is 0.273 though the Indian average in this respect is 0.297. All India rural poverty in 2004-05 was 28.7% under Head Count Rate and in West Bengal that was 28.5%. As per the Tendulkar Committee Report, 42% of the people in India are under poverty line, whereas that in West Bengal is 38%. The Human Development Index (HDI) of 2007-08 for India was 0.467 and for West Bengal was 0.492. Growth rate of Net Domestic Product for West Bengal is 17%, though that for India, as a whole, is 16%. Rural labour participation rate as per the 66th Round of NSS (usual status)is 40% in West Bengal and 41% in India. Rural unemployment under the P+S Status is 19 in West Bengal and 16 in India. The literacy rate in West Bengal is 77% as compared to 74% national literacy rate (2011 Census). Per 1000 males there are 947 females in West Bengal against the national sex ratio of 940. Despite all these success stories of West Bengal, where it is mainly handicapped is its financial inclusion scenario. Be it in terms of client outreach and loan outstanding or in terms of micro-finance penetration index, the whole of eastern region including West Bengal is always lagging far behind mainly the southern region, particularly Andhra Pradesh. As per Crisil Inclusix 2013, the financial inclusiveness in India is 40.1 and that for the southern region is 62.2 whereas that for the eastern region is only 28.6 and for West Bengal is 28.8. The rank of West Bengal is as low as 29 among the 35 states in India in respect of financial inclusiveness. In terms of branch penetration or deposit penetration, the performance of West Bengal is below average, the index being between 25 and 40. But, in case of credit penetration, its performance is abysmally low (score is less than 25), which actually is considered to be the significant reason of higher rural poverty in West Bengal though its urban poverty always is lower than the national average. As per the West Bengal State Level Bankers

Committee Report also, it is seen that in providing credit to rural people, the rural branches of the banks are always lagging behind the target though, in terms of opening branches or deposit accounts, they all very successfully have reached the target. Economic Survey 2013 reveals that the credit-deposit ratio of the banks was just 59% in West Bengal though in Tamil Nadu this was 125%. Against this background, the drowning rural poor of West Bengal are trying to survive by catching hold the straw of SHGs which are practically the commanding force now in the context of micro-finance or financial inclusion in West Bengal. Here comes the rationale of the present study.

3. Literature Review

A number of studies have been done so far in India and abroad on the issues under consideration. But the studies on West Bengal are still few and far between. Some stray studies on some districts of West Bengal are being done very recently, but those are not sufficient to have an overall picture of poverty alleviation in West Bengal, particularly with the help of the SHG related activities of the State. The present study humbly attempts to fill in that gap. The works that have been studied to have guidelines for the study are mentioned below.

- Mosley (2001) showed in his study how in Bolivia the assets and income were increased commensurate with the micro-finance activities.
- Mallick (2002) explained in his study on Bangladesh the social impact of micro-credit that already started to surface there.
- Rajiven's study (2008) on India examined the scope of micro-finance and how it could boost resources for rural poor.
- The work of Dhar (2009) is a notable work on SHGs in India that highlighted the pre-requisites for enhancing effectiveness of SHGs.

Some other contemporary works like those of Biswas (2009), Bagchi & Dandapat (2010), Das (2011), Majumdar (2014), Chakraborty (2014), etc, have also been surveyed to work out the scope and the methodology of the present study .

4. Scope and Objective of the Study

The poorest parts of West Bengal are the northern, south-eastern and western regions. For the present study one district from each of these three regions have been chosen on convenience sampling basis. Then, eighty SHG-participant households and twenty non-SHG participant households from each of those districts have been selected to compare their poverty-related situations. The SHG-participants were visited twice to know their change in income, if any, after joining the SHG activities. These three hundred respondents in total have also been chosen based on convenience. The districts, thus, selected were Paschim Medinipur, South 24 Parganas and Jalpaiguri. The opinion of 100 respondents from each of these districts have been analysed with the help of relevant statistical tools to identify–

- the income level of the SHG participants before and after joining SHGs, and
- the income level of the SHG participants and non-SHG participants

5. Income Level of the SHG Participants before and after Joining the SHG

Jalpaiguri

Of the 80 respondents questioned in the Jalpaiguri District, 17, 43 and 20 were in the income brackets of Rs. 0-500, Rs. 501-1000 and Rs. 1001-1999 respectively before they joined the SHG named Ashiana Swanirbhar Gosthi of village New Mal under the Mal Block. After two years, 15 in the income bracket of Rs. 1001-1999 reported no change in their income. But as is evident from Table 1, in all other cases, the income has increased. Six in the income bracket of Rs. 0-500 have been promoted to the income bracket of Rs. 1001-1999, and 11 of the same have been elevated to the income bracket of Rs. 2001-2999. From the income group of Rs 501-1000, 31 respondents could enter the income group of Rs. 2001-2999, 11 entered to the income group of Rs. 3001-3999 and 01 could even enter the income group of Rs. 4001-4999. Of the 20 respondents in the income group of Rs. 1001-1999, 5 could enter the income group of Rs. 2001-2999.

Paschim Medinipur

In case of the Paschim Medinipur District, the impact of joining SHG on income of the participants is more prominent (Table 1).

Table-1 : Household Income before and after joining SHG

District	Income level after Participation (Rs.)		Income level before Participation (Rs.) 0-500	501-1000	1001-1999
Jalpaiguri	1001-1999	Count	6	0	15
	2000-2999	Count	11	31	5
	3000-3999	Count	0	11	0
	4000-4999	Count	0	1	0
Paschim Medinipur	1001-1999	Count	0	3	13
	2000-2999	Count	0	0	14
	3000-3999	Count	32	12	6
South 24 Parganas	1001-1999	Count	7	0	18
	2000-2999	Count	4	0	3
	3000-3999	Count	3	45	0

Out of total 80 respondents, the income of 32 was between Rs. 0-500 and what is truly notable is that the income of all of them reached the bracket of Rs. 3001-3999 after joining the SHG named Chandkuri Netaji Sahayak Dal of Chandkuri village under the Sabang Block. Of 15 respondents with income group of Rs. 501-1000, 3 could enter income group of Rs. 1001-1999 and as many as 12 could enter the income group of Rs. 3001-3999. Among the respondents who were originally in the

income group of Rs. 1001-1999, 14 could enter the income group of Rs. 2001-2999 and 6 could enter the income group of Rs. 3001-3999. 13 of them, however, reported no change in their income.

South 24 Parganas

In the district of South 24 parganas, most of the respondents, 45 out of 80, were in the income bracket of Rs. 501-1000 and the income of all was upgraded to the income bracket of Rs. 3001-3999. It is, no doubt, very much inspiring. Among 14 respondents belonging to the lowest income group (Rs. 501-1000), 7, 4 and 3 respondents could enter the income level of Rs. 1001-1999, Rs. 2000-2999 and Rs. 3000-3999 respectively. Out of the 21 SHG participants falling originally in the income group of Rs. 1001-1999, however, 18 could not increase their income and only 3 could reach the immediately next income group.

Summary of the Findings

- In all the sample districts, there have been notable increases in the income level of the SHG participants.
- Poorer people, i.e. the people who fall in the income group of Rs. 0-500, are more aggressive in enhancing their income with the help of the SHG-related activities and, in terms of redressal of income inequality among the rural people, it is undoubtedly a good sign.
- Since the p-values, using the Pearson Chi-square Test, are always less than 0.05 (Table 2), it can also be statistically concluded that there is significant association between increase in the income level and participating in the SHG-related programmes.

Table-2 : Chi–Square Tests of Table-1

District		Value	df	Side (2 sided)
Jalpaiguri	Pearson Chi Square	45.533	6	.000
	Likelihood Ratio	56.217	6	.000
	Linear–by-Linear	4.605	1	.032
	N of valid Classes	80		
Paschim Medinipur	Pearson Chi Square	50.851	4	.000
	Likelihood Ratio	63.607	4	.000
	Linear–by-Linear	36.653	1	.000
	N of valid Classes	80		
South 24 Parganas	Pearson Chi Square	74.602	4	.000
	Likelihood Ratio	95.109	4	.000
	Linear–by-Linear	8.8873	1	.003
	N of valid Classes	80		

6. Income Level of the SHG Participants and the Non-SHG Participants

Table 1 reveals that the income of all the SHG participants were less than Rs. 1999 before joining SHG. Table 3, on the other hand, reveals that among the non-SHG participants, only 10% in case of Jalpaiguri, 20% in case of South 24 Parganas and 75% of Paschim Medinipur belonged to the same category. That the poorer people more in number are joining the SHG-related activities and are being benefited economically is evident from this.

Table-3 : Household Income of Participants & Non-Participants

District	Income level (Rs.)		SHG Participants	Non Participants	Total
Jalpaiguri	1001-1999	Count	21	06	27
	2000-2999	Count	47	02	49
	3000-3999	Count	11	12	23
	4000-4999	Count	01	00	01
	Total	Count	80	20	100
Paschim Medinipur	1001-1999	Count	16	15	31
	2000-2999	Count	14	04	18
	3000-3999	Count	50	00	50
	4000-4999	Count	00	01	01
	Total	Count	80	20	100
South 24 Parganas	1001-1999	Count	25	04	29
	2000-2999	Count	07	16	23
	3000-3999	Count	48	00	48
	4000-4999	Count	00	00	00
	Total	Count	80	20	100

After joining the SHG- related activities, all the participants have either reached the income level of non-SHG participants or been able to beat them in terms of the monthly income. Thus, the SHG-related activities in rural Bengal are not only alleviating the abject poverty of rural poor but also they are helping, inter alia, in reducing the income inequality among the rural masses. The Pearson Chi-square test value being less than 0.05 in case of each of the sample districts (Table 4), it can be concluded once again that there is significant association between household income and participation in the SHG-related activities.

Table-4 : Chi-Square Tests of Table 3

District		Value	df	Side (2 sided)
Jalpaiguri	Pearson Chi Square	22.974	3	.000
	Likelihood Ratio	22.923	3	.000
	Linear–by-Linear	4.697	1	.030
	N of valid Classes	100		
Paschim Medinipur	Pearson Chi Square	32.168	3	.000
	Likelihood Ratio	38.068	3	.000
	Linear–by-Linear	22.714	1	.000
	N of valid Classes	100		
South 24 Parganas	Pearson Chi Square	48.013	2	.000
	Likelihood Ratio	48.544	2	.000
	Linear–by-Linear	5.129	1	.024
	N of valid Classes	100		

7. Conclusion

Micro-finance is considered to be an important weapon to fight against financial exclusion or exclusive growth. But, in practice, most of the micro-finance activities are working now far away from the desired objective. Instead of helping the poor, to use them for profit-making has become the covert objective of most of the MFIs. Somewhere the interest rate is too high, in some cases, the MFIs themselves are reluctant. Formalities somewhere are cumbersome, collateral in other cases is charged in disguise. The poorest of the poor are, therefore, getting very rarely the benefit justifying the slogan that "micro-finance is dead, long live micro-finance". But amongst all these, the SHG-based micro-finance is, perhaps, the exception. What is clear from the study is: the SHG participants are poorer than the non SHG participants, i.e, the lower layer of the rural poor is the main beneficiary of this programme. Moreover, it has been seen that most of the SHG-participants have been able to increase their monthly income after joining SHG. Thus, it is empirically established that the SHGs are playing a significant role in poverty alleviation of West Bengal. Some contemporary studies on some other districts of West Bengal (Das, 2011; Majumdar, 2014; Chakraborty; 2014) have deduced more or less the same conclusion. Desired goal of the SHG-related activities is still a long way to go. Required training must be given to the participants so that they can go for profitable economic activities. Loan amount is too meagre to take off. Marketing of the products is truly a challenge. Cluster development may be a solution to all these problems. Above all, the attitudinal change is necessary on the part of both the policy-makers and the bankers without which never the micro-finance programme can be a comprehensive success. Still, what has been achieved in the mean time is truly praiseworthy.

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Inter State Disparity in Consumption Pattern in India During 1972-73 to 2009-10

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Abstract : This paper examines the nature and pattern of inter-state disparity in the consumption pattern of the major states of India using the National Sample Survey Organization's large sample quinquennial data during the period from 1972-73 to 2009-10. It is found that there has been an increasing tendency in the disparity in the consumption pattern across the states. However, the states are found to have witnessed an increasing trend in real MPCE in varying degrees with increasing inter-state variations in rural and urban areas. Although rural inequality is indicative of a marginal decline, there is a consistent increase in the urban inequality measured by Gini Coefficient. Further we also find a drastic modification in the consumption pattern in favour of non-cereal and non-food components across the different states both at the rural and urban level. The analysis thus helps us substantiate clearly that the cross state inequality in consumer expenditure seems to have increased over the period and has become more divergent.

Key-words : Inequality, consumption, growth, Gini coefficient.

1. Introduction

It is well recognized that one of the crucial problems facing our economy has been the inequality which has varied dimensions. The varied dimensions of inequality have been reflected in terms of inequality in income, wealth, consumption etc. One can think of such dimensions of inequality across the regions, income classes, religion, castes and also across consumption baskets. It is true that immediately after independence of our economy the major objectives were ending of poverty, inequality and ignorance. But even after the elapse of 67 years after independence it is found that a vast majority of our population both in rural and urban India are suffering from abject poverty. Further although the degree of inequality in the distribution of income vis-à-vis consumption has been reduced but its magnitude still remains at a higher degree. Moreover the rural urban disparity in respect of consumption is also found to be of higher order and for the urban sector it reveals a tremendous increasing trend.

Though the impact of various strategies of development is yet to come out the data on inequality and poverty tell us a very sad scenario both at the aggregative and cross state scenario–both in rural and urban area. It has been found that the inequality in the distribution of Monthly Per Capita Expenditure (MPCE) in the rural areas has increased tremendously between the periods 1993-94

to 2009-10. The Lorenz ratio has been increasing steadily with the urban Lorenz ratio higher than the rural Lorenz ratio. When the inter-state poverty ratios are compared it is seen that all the 16 states have shown a decline in the poverty ratios. Further it has been found in the 66th round of survey of NSSO 2009-10 that the real MPCE has marginally increased from Rs. 158.10 in 1987-88 to Rs. 187.79 in 2009-10. In case of urban area however the same has increased from Rs. 249.92 in 1987-88 to Rs. 235.03 in 2009-10 during the last 24 years. During the same period the prices of commodities increased by 394% for rural area and 400.03% for urban area. So the improvement in the living standard is rather far from what was expected under the various policy regimes.

Thus it is clearly understood that growth in India in the post-reforms period was driven by consumption expenditure growth. Indian consumer has largely benefited from the reforms and has been able to increase the per capita consumption substantially. Therefore consumption expenditure is considered to be a better indicator of the economic well-being of people. It is considered to be a fair indicator of human living standards, since it aggregates the monetary value of all goods and services actually consumed during a particular reference period. This includes consumption out of purchase, home produce, free collection, gifts etc. Due to lack of availability of proper income data, consumption data is always considered a proxy of the income levels. Under this backdrop we would like to study the nature and pattern of consumption expenditure and the different dimensions of it. The pattern of growth of consumption expenditure is not uniform across the different states, income classes, item groups, rural-urban areas etc. giving rise to consumption inequality and the different facets. These different dimensions of consumption inequality have an impact on the level of living of households causing disparity in the level of living. The main focus of this study is to analyze the trend of consumption inequality and its impact across the different levels of income classes, states and at the rural and urban level.

Brief Review of Literature

There is indeed a vast literature on poverty and inequality which is mainly based on MPCE (Ghosal, 2005, 2009, 2011; Himanshu, 2010; Sengupta, 2008; Sen, 2000; Paatnaik; 2010, Ravillion; 1998, Datt; 1999, Chauhan; 2005, Datt and Ravillion, 2002). One can safely classify the literature according to its nature; focus etc. into the different categories. There are some studies which focus on the understanding of the general trend of inequality (Ghosal; 2012, 2014, Datt; 2002, Sen and Himanshu, 2004, Pal and Ghosh, 2007). In most of these studies it is found that the growth of income is accompanied by the existence of poverty and inequality which is puzzling indeed (Ghosal, 2012). The decadal annual growth rates NSDP reveal a mixed picture over the period and it also reveals a tremendous inter-state variability measured in terms of the time profile of the values of coefficient of variation. It seems that some of the states could not take advantage of the market economy. The withdrawal of the public sector from the development process also was a major reason contributing to the interstate disparity in the initial phase of economic reforms. But the variability seems to have declined substantially with the progress of the economic reforms thereby reducing the interstate inequality. Among the other studies some are concentrated in the analysis of poverty and inequality in the cross country level. (Ghosal; 2005, 2009, 2010). It has been seen that even after globalization and economic reforms the incidence of poverty in most of the countries is very high. The most

important factor contributing to inequality in the well beings of the countries has been found to be differential in real per capita income.

The other group of studies concentrated on the study of aggregate and cross state analysis of poverty and inequality. (Ghosal; 2005, 2010, Chauhan; 2005). It is found that the goals of removal of poverty, inequality and ignorance after independence were not achieved in our country. The cross state differentials in the incidence of poverty and its magnitude of decline are found to be high and the same is increasing at an alarming high rate. Literature is also very rich in analyzing the level and impact at the rural urban areas highlighting the rural-urban divide (Patnaik, 2010, Deaton and Dreze, 2010, Krishnaswamy, 2012). Inter-state rural variability measured through the coefficient of variation is found to have declined in the pre reform period followed by an increasing trend in the post reform period although the degree of variability has been found to be low. A similar trend is seen in the urban inter-state inequality also. The growth has been more pro rich during the post reform period. It can be thus safely concluded that in rural areas growth in MPCE across states has caused a decline in inequality whereas in urban areas inequality has increased with a growth in MPCE. Also a higher base level inequality in income causes higher inequality. There was a substantial increase in rural and urban MPCE over the years till 2001-12. But the rural households continue to be worse off than their urban counterparts in terms of MPCE and the rural urban divergence in expenditure has widened over the period. The rural-urban expenditure divergence has dropped over the last few years, presumably because intense public intervention policies for rural employment and welfare have paid off (Krishnaswamy, 2012).

There were also a vast number of studies concentrating on the measurement of magnitude of poverty and inequality, across the states both in the rural and urban areas. (Himanshu; 2010, Sengupta; 2008, Patnaik; 2010). These studies try to analyze the shift in consumption pattern at the urban rural level and the reasons causing the shift in pattern. It was found out that poverty has declined between 1993-04 and 2004-05 but the substantial part of the decline has occurred in 1999-2005. But doubt has been expressed regarding substantial fall in poverty in both rural and urban areas. There are few studies which have been tried to examine the composition of consumption expenditure for estimating the demand trend for various items in the economy (Rao 2000, Kumar and Mathur 1996, Satyasai and Vishwanathan1996 and Meenakshi 1996). It was opined that it was difficult to arrive at an estimate at the rural-urban disparity in cereal consumption due to manual labor independently. The main reason for higher cereal intake in rural India as compared to urban India has been due to the higher manual labour in these areas. Although this trend is seen to be declining, still it constitutes around 50% of the rural-urban differences. Again though the cost of obtaining urban goods in rural India has declined, but it is still high as compared to the urban prices. Consequently 25 percent of higher per capita consumption of cereals in rural India can be attributed to cross elasticity of demand.

The review of literature, however, reveals that most of the studies in this area are dated and very few have focused on inter regional disparity in real consumption expenditure. Keeping this backdrop in mind, the proposed study aspires to take a humble attempt to bridge the gap in the existing literature. The proposed study aims to examine (i) the nature and trend in inequality in consumption

in India since the post reform period (ii) to look into whether there is any change in the consumption pattern of people in India (iii) to make an assessment of the nature of the disparity in consumption between rural and urban states. The rest of the paper is designed as follows: Section II discusses data and methodology used in this paper; Section III analyses the nature of inequality in consumption. Section IV examines the changes in the consumption pattern at the interstate level. Finally, section V presents the concluding observations.

2. Data and Methodology

Based on the objectives of study, the analysis of the consumption expenditure inequality across state is done on the basis of MPCE (at constant 1993-94 prices) and the inequality is measured in terms of Gini Coefficients for the major states from 1972-73 to 2009-10. The analysis is also done at the rural and the urban level. Therefore, the MPCE and Gini coefficients have been used for the all India level and for the major Indian states for both rural and urban areas. The data in this respect are taken from various NSSO rounds. The secondary data has been used from CSO's official website (www.indiastat.com) and other data taken from the annual reports of Planning Commission of India. To analyze the nature of consumption inequality at the all India level for the period of 1972-73 to 2009-10, firstly the Gini coefficients for both the rural and urban areas for the 15 major Indian states are computed. A close analysis of the data will enable us to understand the trend of consumption inequality across the Indian states and at the all India level. Again in order to highlight the nature of inequality of MPCE of both rural and urban areas we have expressed MPCE data at constant 1993-94 prices. To obtain consumption expenditure at constant prices, we have employed the Consumer Price Index of Agricultural Labourers (CPIAL) as the deflator in the rural areas, and the Consumer Price Index of Industrial Workers (CPIIW) in the urban areas. To understand the degree of variability in the MPCE across the states and over time we have computed the profile of coefficient of variation.

3. Analysis of Consumption Pattern at the Aggregate Level

The main aim of this section is to understand and analyze the pattern of consumption expenditure at the aggregative level. It is seen that there has been a small but steady increase in MPCE over the reference years of our study, in both the rural and the urban areas, with inequality, as measured by the Gini coefficient, displaying a sudden spurt in urban India in the 2000s-plausibly the result of a combination of liberalized economic policies and initiatives. One can see that in rural India, the shares in consumption expenditure of the poorest two deciles and of the richest decile have increased in 2009-10 as compared to 1971-72, while the shares of deciles 4 to 9 have actually declined. In urban India, the shares of all but the richest two deciles have declined. In the rural areas, the ratio of the richest decile's mean income to that of the poorest decile increases from 6.07 in 1970-71 to 6.35 in 2009-10, and the corresponding increase, in the urban areas, is from 8.37 to 10.74. This suggests rising over-time disparity, which is much more pronounced in urban than in rural India. It is clearly seen that the absolute decile-wise increase in mean income from the base to the terminal years keeps systematically increasing with the decile in both the rural areas and the urban ones.

Table-1 : MPCE (Rs) trends in India (at constant 1993-94 prices)

	1972-73	1977-78	1983	1987-88	1993-94	1999-00	2004-05	2009-10
MPCE rural	219.86	249.48	258.62	280	281.40	305.50	322.83	342.44
MPCE urban	364.72	356.19	397.2	426	474.19	524.19	618.99	607.48

Source : Authors computation

The table-1 above shows estimates of all-India average MPCE various quinquennial surveys of consumer expenditure. For rural India, real MPCE is seen to have grown from Rs. 219.86 in 1972-73 to Rs. 342.44 in 2009-10—an increase of 90% over 40 years. In urban India there has been a substantially higher growth in real MPCE from Rs. 364.72 in 1972-73 to Rs. 607.48 in 2009-10—an increase of over 100% in the 40 year-period since 1972-73. A closer look at the Coefficient of variation (CV) of real MPCE is also helpful in analyzing the level of consumption inequality. It is seen that the CV has increased from 17.97 in 1972-73 to 29.86 in 2009-10 signaling a high rate of growth in inequality. The CV has shown consistent increase till 1987-88 where it reduced to 17.01. With the inception of the reform it has registered a consistent increase across the period showing a wide gap across the income classes.

We have also computed the relative shares of bottom and top 30% of population in total MPCE. Now if the share of bottom 30% population in expenditure classes registers a decline and top 30% register an increase, then this will mean that the poor are getting poorer and the rich are getting richer. In rural India it is found that there has been an increase of 0.6 percentage points in the share of consumption expenditure of the bottom 30% population and an increase of 0.2 percentage points in the share of consumption expenditure of the top 30% population during 1973-2010. However, in urban India, the consumption inequality and the share of consumption expenditure of the bottom and top 30% population indicates that poor are getting poorer and rich are becoming richer during the period 1973-2010. It is seen that the share consumption expenditure of the bottom 30% populations has declined by 2.1 percentage points and the shares of consumption expenditure of the top 30% population has increased by 3.9 percentage points.

A better understanding of the consumption pattern at the aggregate level can also be understood by the composition of the MPCE across the country (Table-2). The changes in the composition and preference of certain items of consumption demonstrate the changing pattern of consumption expenditure in our country. The share of food is seen to have declined by about 24 percentage points to 48.6% in the rural sector and by about 26 percentage points to 38.5% in the urban sector. Cereals have registered the largest decline in share among all the item groups—from 40.6% to 12% in rural India and from 23.3% to 7.3% in urban India. Again the share of food and share of cereals fall appreciably with rise in MPCE level. In rural India as a whole, for instance, the share of food falls from over 68% in the lowest MPCE class (Rs. 0-235) to under 34% in the highest (Rs. 1155+).

Table-2 : % Share of Food and Non-Food Expenditure in Total MPCE

	RURAL		URBAN	
Item groups	**1972-73**	**2009-10**	**1972-73**	**2009-10**
Cereals	40.6	15.6	23.3	9.1
Gram	0.6	0.2	0.3	0.1
cereal sub	0.5	0.1	0.1	0
pulses & products	4.3	3.7	3.4	2.7
milk & products	7.3	8.6	9.3	7.8
edible oil	3.5	3.7	4.9	2.6
egg, fish & meat	2.5	3.5	3.3	2.7
Vegetables	3.6	6.2	4.4	4.3
fruits & nuts	1.1	1.6	2	2.1
Sugar	3.8	2.4	3.6	1.5
salt & spices	2.8	2.4	2.3	1.5
beverages, etc.	2.4	5.6	7.6	6.3
food total	72.9	48.6	64.5	38.5
pan, tobacco, intox.	3.1	2.2	2.8	1.2
fuel & light	5.6	9.5	5.6	8
clothing & bedding	7	4.8	5.3	4.7
Footwear	0.5	1	0.4	0.9
misc. g. & services	8.7	26	19.2	37.8
durable goods	2.2	4.7	2.2	6.7
non-food total	27.1	51.4	35.5	61.5
total expenditure	100	100	100	100

Source : Computed from different NSSO Reports

In urban India the fall in the share of food is steeper. It is observed that with higher average MPCE, a lower share of cereals in total expenditure is witnessed. It has been observed that the share of cereals is closely correlated with MPCE class. The share of non-food expenditure has registered a consistent increase in both rural and urban India since 1972-73. Pan, tobacco and intoxicants exhibit a distinct downward trend, especially in urban areas, while fuel and light appear to show an increase in share in

the last decade. Clothing and bedding show an overall fall and the share of durable goods appears to be picking up. The greatest gainer in share of expenditure is clearly the "miscellaneous goods and services" category (including education and medical care). The share of this group has soared from 8.7% to 26% in rural India and from 19% to 40% in urban India.

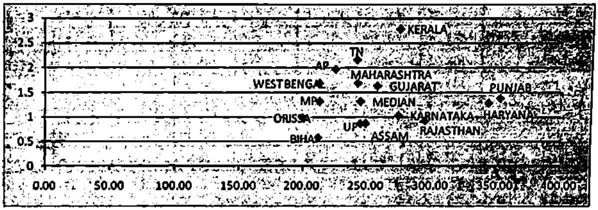
It has been noted in the literature on consumption that the per capita cereal consumption of the Indian population has been declining in both rural and urban areas over the past two or three decades. For all sections of the population, this fall is distinctive. Over years diet has become more varied especially in the middle and upper income groups. Calorie needs may be changing in especially in urban India because labor-saving devices are becoming increasingly available in the household, in the workplace, and in transportation. This also is an indication of the improved purchasing power of the different income classes across rural India. Therefore it is seen that the quality of life across the different consumption classes has improved at the same time as inequality in consumption across different consumption classes has increased.

4. Cross State Analysis of Consumption Pattern in India

This section aims to understand the difference in the growth of consumption expenditure across the different states and the extent of inter-state inequality. To study the pattern of real growth in the level of living in Indian states the combined MPCE of the major Indian states is taken. The relative positions of each of the fifteen major states have been studied in detail. Firstly the best five states in terms of MPCE combined level in 1972-73 were Punjab, Haryana, Rajasthan, Haryana and Karnataka while the most impoverished states were Orissa, Bihar, West Bengal and Madhya Pradesh. The other states remained more or less close to the national average. In 2009-10 the states of Punjab, Haryana, Maharashtra and Gujarat maintained their lead position though Kerala had emerged as the new leader. Bihar and Orissa continued to be the worst performing states being accompanied by Uttar Pradesh and Madhya Pradesh respectively. Values of Spearman rank correlation of real MPCE combined of a state with respect to that of the previous round remained very high: 0.925, 0.911, 0.771, 0.825, 0.927, 0.998 and 0.826 through 1972-73 to 2009-10 respectively. The CV of MPCE of the major states is seen to increase from 17.97 in 1972-73 to 21.41 in 1983 signaling increase in the level of inequality. Then it witnessed a sudden fall to 19.15 signaling a drastic decline in level of inequality at all India level in 2004-05. But in 2009-10 witnessed a sudden increase in CV to 29.86 projecting a rising level of inters state inequality. It is noticed that across the period of research most of the states have been growing at widely varying rates.

The figure clearly shows interstate variability in terms of the growth of MPCE. On the left block of the diagram (low base, low growth) are the states like Bihar and Orissa, while on the top right (high base, high growth) are the states of Kerala, Punjab, Gujarat, Tamil Nadu, Haryana and Maharashtra. The states of Andhra Pradesh, West Bengal and Madhya Pradesh appear in the top left block (low base, high growth) and Karnataka, Assam and Rajasthan on the bottom right (low growth, high base). Therefore it is clear that the states with higher expenditure level are largely the states, which have achieved higher growth rates during the period of investigation. Thus divergence is the general trend among Indian states in recent times in terms of living.

Chart 1 : Scatter plot of base level MPCE (1972-73) and growth rates of MPCE of major Indian states



In analyzing the trend of consumption expenditure across the different states the performance of the state at the rural and urban areas are also considered separately (table-3 and table-4). Andhra Pradesh has shown a consistent increase in real MPCE in both rural and urban India. It was at the fourth position at Rs 376.38 (rural) and Rs 674.15 (urban) respectively in 2009-10. Assam has shown a dismal increase in rural real MPCE since 1993-94 and its urban MPCE was at Rs 523.81 much below the all India MPCE Rs 607.48 for 2009-10. Bihar has been one of the states with the lowest rural and urban MPCE over the 8 quinquennial periods. Surprisingly for the state of Haryana the growth of real rural MPCE was more consistent than the urban real MPCE. But for Karnataka the urban real MPCE has been growing steadily since the post reform period till 2004-05. In 2009-10 the urban MPCE drastically declined to Rs 583.67. Karnataka has not had a very favorable growth story in the rural sector. Kerala has registered a consistent increase in rural real MPCE since 1972-73 but showed a sharp increase in urban real MPCE in 2009-10 by 73.5% p.a. at Rs 905.78. Orissa with Bihar has always the lowest real rural MPCE. But the urban real MPCE of the state started declining only after 2000.

Table-3 : Trend in Rural Real MPCE of Major Indian States (1972-73 to 2009-10)

States	1972-73	1977-78	1983	1987-88	1993-94	1999-00	2004-05	2009-10
Andhra Pradesh	198.04	223.19	258.91	283	288.70	281.23	325.85	376.38
Assam	242.34	226.89	266.70	272	258.11	270.59	325.16	318.45
Bihar	206.02	206.83	204.04	242	218.30	245.30	249.73	251.29
Gujarat	233.82	259.75	297.79	285	303.32	349.37	340.40	367.16
Haryana	339.10	364.01	400.64	380	385.01	460.34	486.40	514.39
Karnataka	206.70	231.14	261.74	264	269.38	301.28	292.75	297.79
Kerala	261.16	308.11	356.37	374	390.41	498.17	574.39	683.03
Madhya Pradesh	193.83	205.70	232.21	251	252.01	249.02	258.68	294.10

Maharashtra	201.89	258.05	243.98	285	272.66	303.93	305.55	373.06
Orissa	176.60	172.88	180.28	226	219.80	211.55	237.57	252.03
Punjab	353.42	450.45	450.11	432	433.00	478.84	482.39	546.13
Rajasthan	271.18	407.99	341.70	315	322.39	344.44	340.52	370.48
Tamil Nadu	208.08	219.82	229.40	273	293.62	328.40	336.36	357.20
Uttar Pradesh	223.46	264.48	265.44	263	273.83	295.06	310.11	305.90
West Bengal	192.42	206.56	218.73	265	278.78	286.70	324.12	315.50
all-India	219.86	249.48	258.62	280	281.40	305.50	322.83	342.44
CV	**22.50**	**30.31**	**26.98**	**19.57**	**20.82**	**26.63**	**27.46**	**31.76**

Source : Various Reports of NSSO

Rajasthan which has had a decline rural and urban real MPCE across the years suddenly slipped to the 10th position in 2009-10 registering a 27% decline in urban MPCE at Rs 568.03. In the rural areas, the states which have registered more than 80% growth in MPCE during 1973-2010 are Andhra Pradesh, Kerala and Maharashtra. In the urban areas, such states are Andhra Pradesh, Gujarat, Kerala, Maharashtra Punjab and West Bengal. A closer look at the C.V across the year indicates that the inequality has shown a fluctuation at the all India level. In rural India there has been a consistent increase in the consumption inequality since the post reform period where as in urban India inequality seems to have reduced from 1987-88 to 2004-05. But it again increased in 2009-10.

Table-4 : Trend in Urban Real MPCE of Major Indian States (1972-73 to 2009-10)

States	1972-73	1977-78	1983	1987-88	1993-94	1999-00	2004-05	2009-10
Andhra Pradesh	336.59	375.5	401.1	398	408.6	470.37	521.86	674.15
Assam	307.47	326.8	335.5	467	458.57	502.73	593.23	523.81
Bihar	265.35	294.75	295.5	323	353.03	377.97	381.75	371.43
Gujarat	319.16	414.36	394.7	416	454.18	558.64	612.5	632.31
Haryana	366.51	387.15	466.3	498	473.92	560.5	584.75	645.58
Karnataka	479.48	470.24	641.4	385	746.93	750.35	698.81	583.67
Kerala	345.97	385.33	419.1	461	423.14	539.52	521.87	905.78
Madhya Pradesh	308.02	346.15	403.4	408	493.83	548.43	647.4	499.66
Maharashtra	329.64	387.54	374.1	484	408.06	456.7	502.15	759.18
Orissa	440.69	489.93	478.9	390	529.8	592.54	566.58	484.69
Punjab	352.25	358.27	361.8	467	402.54	389.84	427.33	677.89
Rajasthan	402.86	469.62	464.9	412	510.73	587.27	721.45	568.03
Tamil Nadu	321.91	373.22	395.5	430	424.73	479.7	483.78	571.09
Uttar Pradesh	372.83	381.25	403.7	375	438.29	606	585.06	464.29

West Bengal	274.16	306.33	317.9	432	388.97	428.92	458.74	590.48
all-India	364.72	356.19	397.2	426	474.19	524.19	618.99	607.48
CV	**16.71**	**14.99**	**20.18**	**11.06**	**20.03**	**18.29**	**17.35**	**21.73**

Source : Various Reports of NSSO

A closer examination of the values of the Gini Coefficients of MPCE for all the eight quinquennial NSS rounds (1972-2010) for the rural and urban sectors of the 15 major states reveals that in the rural areas, the inequality has declined in 11 states during 1972 - 2010 whereas it has increased in other states (Table-5). Maximum decline in the value of rural Gini coefficient has been observed for the state of Rajasthan (28.8%) followed by West Bengal (21.64%). Other States that have registered a decline are Bihar (21.53%) Gujarat (16.23%), Karnataka (13.92%), Madhya Pradesh (4.58%) Maharashtra (13.55%), Orissa (16.03%), Punjab (6.19%) and Tamil Nadu (2.94%).

Table-5 : Gini Coefficient of Major Indian States (Rural)

State	1972-73	1977-78	1983	1987-88	1993-94	1999-00	2004-05	2009-10	% Point Change
A.P	0.273	0.298	0.294	0.301	0.284	0.233	0.288	0.278	1.83
Assam	0.18	0.179	0.192	0.222	0.176	0.2	0.197	0.244	35.56
Bihar	0.288	0.259	0.256	0.264	0.223	0.206	0.208	0.226	-21.53
Gujarat	0.302	0.285	0.257	0.233	0.236	0.234	0.268	0.253	-16.23
Haryana	0.277	0.288	0.272	0.281	0.301	0.238	0.323	0.301	8.66
Karnataka	0.273	0.321	0.303	0.292	0.265	0.241	0.264	0.235	-13.92
Kerala	0.31	0.353	0.33	0.323	0.287	0.27	0.341	0.417	34.52
M.P	0.306	0.331	0.295	0.29	0.277	0.243	0.269	0.292	-4.58
Maharashtra	0.31	0.462	0.285	0.331	0.303	0.258	0.31	0.268	-13.55
Orissa	0.312	0.301	0.267	0.267	0.243	0.244	0.282	0.262	-16.03
Punjab	0.307	0.303	0.279	0.295	0.265	0.239	0.278	0.288	-6.19
Rajasthan	0.316	0.464	0.343	0.303	0.26	0.208	0.248	0.225	-28.80
T.N	0.272	0.319	0.325	0.323	0.306	0.279	0.315	0.264	-2.94
U.P	0.277	0.299	0.29	0.279	0.278	0.245	0.287	0.356	28.52
W.Bengal	0.305	0.292	0.286	0.252	0.252	0.225	0.273	0.239	-21.64
All India	0.302	0.337	0.298	0.291	0.281	0.26	0.297	0.291	-3.64
CV	**11.81**	**22.34**	**12.70**	**11.27**	**13.12**	**9.28**	**14.10**	**18.69**	

Source: Various Reports of NSSO and Author's computation

The state of Assam has witnessed the maximum increase in Gini coefficient (35.56%) followed by Kerala (34.52%), Uttar Pradesh (28.52%), Haryana (8.66%) and Andhra Pradesh (1.83%). The C.V of the Gini Coefficient has shown a consistent increase from 11.81 in 1972-73 to 13.12 in

1993-94. It fell significantly to 9.28 in 1999-00. With the inception of the early 2000s, the C.V consistently increased to 18.69 in 2009-10. Interestingly, the share in consumption expenditure of the bottom 30% population has remained at the same level or gone up in the rural areas of 12 states. The States where the share has declined are Assam, Haryana and Kerala. The percentage share of the top 30% population has declined in the States of Bihar, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan Uttar Pradesh and West Bengal. The analysis clearly shows that there has been a reduction in consumption inequality across the different states in the rural areas.

In the urban areas, the inequality (Gini Coefficient) has not declined in any state during 1972-2010 (Refer to Table 6). The states where the Gini Coefficient has increased most are Gujarat (35.54%), Andhra Pradesh (28.62%) and Kerala (27.69%), the least increment in Gini Coefficients is seen in the states of Bihar (2.79%), Karnataka (3.41%) and Madhya Pradesh (4.60%) respectively. The share in consumer expenditure of bottom 30% population also declined in all the states. The share of top 30% increased in all the states with special reference to Kerala, Gujarat and Andhra Pradesh. The C.V has increased from 11.34 in 1972-73 to 12.28 in 2009-10 indicating that the gap between rich and poor is increasing in urban areas.

Table-6 : Gini Coefficient of Major Indian States (Urban)

State	1972-73	1977-78	1983	1987-88	1993-94	1999-00	2004-05	2009-10	% Point Change
A.P.	0.297	0.319	0.327	0.361	0.32	0.313	0.37	0.382	28.62
Assam	0.267	0.324	0.276	0.337	0.287	0.31	0.314	0.324	21.35
Bihar	0.323	0.304	0.301	0.297	0.306	0.323	0.33	0.332	2.79
Gujarat	0.242	0.308	0.264	0.285	0.287	0.287	0.304	0.328	35.54
Haryana	0.315	0.317	0.313	0.297	0.28	0.287	0.361	0.36	14.29
Karnataka	0.323	0.342	0.334	0.334	0.315	0.323	0.365	0.334	3.41
Kerala	0.39	0.395	0.374	0.387	0.337	0.321	0.4	0.498	27.69
M.P.	0.348	0.377	0.306	0.331	0.327	0.315	0.393	0.364	4.60
Maharashtra	0.367	0.362	0.337	0.352	0.352	0.348	0.371	0.41	11.72
Orissa	0.347	0.323	0.296	0.324	0.304	0.292	0.348	0.389	12.10
Punjab	0.313	0.38	0.319	0.278	0.276	0.29	0.393	0.371	18.53
Rajasthan	0.333	0.301	0.304	0.346	0.29	0.28	0.367	0.378	13.51
T.N.	0.315	0.333	0.348	0.348	0.344	0.381	0.358	0.332	5.40
U.P	0.312	0.327	0.319	0.329	0.322	0.329	0.37	0.329	5.45
W.Bengal	0.338	0.317	0.327	0.353	0.333	0.342	0.376	0.384	13.61
All India	0.341	0.345	0.33	0.352	0.34	0.343	0.373	0.382	12.02
CV	**11.34**	**8.82**	**8.70**	**9.15**	**7.78**	**8.66**	**7.65**	**12.28**	

Source : Various Reports of NSSO and Author's computation

From the above analysis of the Gini Coefficient at the interstate level it is plausible to conclude that there has been no uniformity in the trend. Overall rural inequality is seen to decline marginally whereas there has been a consistent increase in inequality across the different states in urban areas. It is alarming to identify that the states of Kerala and Gujarat which have been the forerunner in the growth of MPCE across the different quinquennial are the states to have witnessed higher rapid growth in the value of Gini Coefficient there by implying a high rate of consumption inequality. Again the state of Bihar which has been suffering a low growth of MPCE across the quinquennial periods, is also the state to be leading as far a decline in consumption inequality is concerned.

5. Concluding Observations

The following conclusions emerge from our study.

First, almost all the states have achieved a substantial increase in real consumption expenditure. A closer look at the CV of real MPCE is also helpful in analyzing the level of consumption inequality. It is seen that the CV has increased from 17.97 in 1972-73 to 29.86 in 2009-10 signaling a high rate of growth in inequality. The CV has shown consistent increase till 1987-88 where it reduced to 17.01. But the inception of the post reform period it has registered a consistent increase across the period showing a wide gap across the income classes.

Second, the share of food and share of cereals fall appreciably with rise in MPCE level. It is observed that with higher average MPCE, a lower share of cereals in total expenditure is witnessed. It has been observed that the share of cereals is closely correlated with MPCE class. The share of non-food expenditure has registered a consistent increase in both rural and urban India since 1972-73. The greatest gainer in share of expenditure is clearly the "miscellaneous goods and services" category (including education and medical care). The share of this group has soared from 8.7% to 26% in rural India and from 19% to 40% in urban India.

Third, the reasons for the above trend may be because the calorie needs may be changing in especially in urban India because labor-saving devices are becoming increasingly available in the household, in the workplace, and in transportation. As a result of the sedentary lifestyle of individual across the higher income classes the calorie intake has shown a decline across the population with an inclination to shift towards other food items and improved purchasing power of the different income classes across rural India.

Finally, in the rural areas, the states which have registered more than 80% growth in MPCE during 1973-2010 are Andhra Pradesh, Kerala and Maharashtra. In the urban areas, such states are Andhra Pradesh, Gujarat, Kerala, Maharashtra Punjab and West Bengal. The C.V of the Gini Coefficient (rural) has shown a consistent increase from 11.81 in 1972-73 to 13.12 in 1993-94. It fell significantly to 9.28 in 1999-00. With the inception of the early 2000s, the C.V consistently increased to 18.69 in 2009-10. In the urban areas, the inequality (Gini Coefficient) has not declined in any state during 1972-2010. The C.V has increased from 11.34 in 1972-73 to 12.28 in 2009-10 indicating that the gap between rich and poor is increasing in urban areas. The analysis thus helps us substantiate clearly that the cross state inequality in consumer expenditure seems to have increased over the period and has become more divergent. By observing the trend of MPCE and Gini coefficient

of the 15 major states it is observable that inequality has shown an upward trend especially in the post reform period. Also, there is an evidence of greater urban inequality than rural inequality in most of the states.

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Role Overload and Conflict in Family Decision Making—A Study Based on Kolkata

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Abstract : Role overload and role conflict are closely related. A frequent international phenomenon of role overload occurs in almost all families when an employed wife also does a large part of the domestic chores traditionally assigned to her. This produces role strain and as a result all tasks cannot be performed in the available time. Consciously acknowledging this imbalance may lead to marital breakup if the issue is not resolved.

Work role and other demands outside the family heighten both role strain and conflict. Married women's employment outside the home increases stress when they are expected to be primary caregivers to their elderly parents and their husbands as is expected in traditional extended and nuclear families. Moreover, family members involved in a joint decision may not share similar purchase motives, choice criteria, information, or product preferences. This paper has focused on how families with working wives adjust their time crunch by using capital equipments, assessing the degree of conflict typical in family decision-making and strategies of conflict management.

Key-words : Conflict, overload, strategies, factor analysis, customer relationship management (CRM).

1. Introduction

An important dimension of husband and wife roles in the family has to do with role load of each spouse. Role load is the continuum of demands on a spouse's time, energy, and other resources. One or both spouses may be under-loaded or overloaded in their household roles. There can be four possibilities, wife over-loaded/husband under-loaded, husband over-loaded/wife under-loaded, both over-loaded; and both under-loaded. Based on these four possibilities, a variety of implications would occur for household consumer behavior such as information acquisition, purchase decision-making and assortment characteristics. Moreover, when both husband and wife are involved in family purchase decision making some degree of conflict is likely. Decision conflict arises when family members disagree about some aspect of the purchase decision. Conflict is likely when a dual-career wife values both home-making and career and views some aspects of these two roles as incompatible. Home career conflict also arises when a dual-career husband values his own career and that of his wife, but is uncomfortable with his wife's success at work. This paper has been divided into two parts. The first paper deals with role overload and part two deals with the conflict to understand the behavior of working wives in family decision-making.

2. Objectives

The objectives of this paper are to :

i. understand how families with working wives adjust to the time crunch;

ii. investigate whether working wives use more capital equipment for their efforts compared to non-working wives;

iii. understand whether there is any significant difference between working wives and housewives regarding role overload;

iv. assess the role overload perceived by working wives with the help of Factor Analysis and 't' statistic, and

v. understand conflict resolution strategies, decision-making styles to resolve role conflict and the marketing implications of role overload.

3. Literature Review

According to Michael Reilly, "Working wives and Convenience Consumption", Journal of Consumer Research, Vol.8 (March1982), pp. 407-418, "Role overload has been defined as a conflict that occurs when the sheer volume of behavior demanded by the positions exceeds available time and energy".

The wife's external employment introduces another set of role demands that increases role strain and conflict through social power adjustments [Standing (1995)].

Home career conflict may exist for both spouses in varying degree in a dual career couple.Some studies have estimated that most home-career conflict in dual career couples is related to role overload (Hall F., & Hall D., 1978).

4. Methodology

Data Collection Methods

The survey work was done by visiting the families and gathering the required data for the research study. The data were mainly primary data and the results were collected by individual survey. Information from working wives and housewives were collected only by meeting them and asking them questions through the help of a questionnaire.

Besides this, the attitude of the respondents was measured by using Scaling Technique like Likert Scale.

Coverage

Sampling Elements : Families (Nuclear & Joint families).

Sampling Units : Working couples and Non-working wives.

Sample Size : 500 Working wives and 250 Housewives.

Extent : Selected wards of Kolkata.

Sampling Technique : Probability and Non-Probability Sampling like Convenience sampling and Judgment sampling were employed as per the requirement of the study.

Fieldwork

The survey was conducted on 500 working wives and 250 housewives of Kolkata. They were selected on the basis of family income and age group of the respondents. The survey was mainly conducted in the selected areas like Salt Lake, Bangur Avenue, Lake Town, North Kolkata (Dum Dum, Shyambazar, Maniktala, Baranagar), Central Kolkata, College Street, South Kolkata (Golpark, Southern Avenue, Garia, Behala, Ballygunge, Anandapur, Santoshpur etc).

Questionnaire

The questionnaire includes both open-ended and close-ended questions.An interval scale was also developed on the basis of the 7-point Likert Scale which consists of 18 variables. Pre-testing was done with 50 working and housewives in Kolkata to check the reliability of the scale used in the questionnaire (See Annexure).

Factor Analysis Using SPSS

The factor analysis option was accessed from Factor sub-option under the Data Reduction option in the Analyze menu option. Then clicking on the Factor option the researcher opened the Factor Analysis window. In the Factor analysis window, all the variables were selected for factor analysis and all of them were moved to variable box. The factor analysis window at the bottom has three important buttons named Descriptive, Extractions and Rotation, which provided important measures of factor analysis.

Under the descriptive window, coefficients, significance level and KMO and Bartlett's test of sphericity under correlation matrix were selected. Depending on the research methodology and extraction objective, researcher had selected the appropriate extraction method from the drop down menu. Further, under the rotation sub-window, researcher had selected the appropriate rotation strategy i.e., varimax.

t-test

The independent sample 't-test' was employed in this study to compare means for two groups i.e., working wives and housewives. In fact, there are two variants of 't' test based on the assumption of equal and unequal variances between two groups i.e., working wives and their husbands'. In this study, 't' test was conducted to test equality of means on the basis of unequal variances.

After adequate elaboration done with Levene's test results on SPSS package for the t-test, the computed t value was compared and the associated significance of support for the null hypothesis of no difference between mean of working wives and housewives were considered for the purpose of drawing inferences.

5. Findings and Analysis

PART-I : ROLE OVERLOAD

Profile of the Respondents

The profile of the respondents is furnished in Table-1. The total sample size of 750 is divided in to 500 working wives and 250 housewives.

Tabl-1 : Sex of the Respondents

Sex	No. of Respondents
Working Wives	500
Housewives	250

In this study we have taken 500 working wives, those who constitutes 66.66% of the total sample and 250 housewives which constitute 33.34% of the total sample.

Role Overload

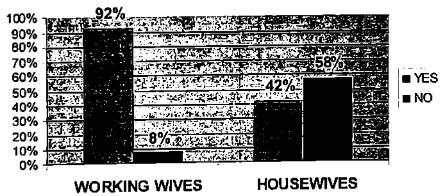
Role overload is especially likely when family consists of two working spouse. Sufficient time is required to perform many household tasks, such as cleaning, cooking, paying bills, bathing children, checkup by doctors, dance lessons. Traditionally, these household tasks have fallen upon the wife as the keeper of household. However, when the wife works eight or more hours per day, performing all of these household tasks is nearly impossible.

Findings

This study has investigated how families with working wives adjust to the time crunch. In this study, it has been found with the interaction with working wives that they substitute capital equipment for their efforts more than non-working wives when working wives are overloaded with work and joint decision making is minimal.

The Figure 1 shows that 92% of the working wives and 42% of the housewives experience role overload. Though the percentage is very high in case of working wives but the reasons are obvious. 92% i.e., 460 working wives respond that they substitute capital equipment in order to save time and energy.

Figure 1: Percentage of Working Wives And Housewives Experience Role Overload



They use more outside cleaning services than non-working wives. They spend less time for household activities than the house wives who didn't work outside the home. Some working wives handle their

time crunch by means of cutting down on leisure activities. Families with working wives also tended to purchase more meals away from home, use more disposable diapers, engage in less housework, and spend less time caring for family members. The laborsaving devices that have been associated with working wives are the microwave oven, washing machines and home delivery services or even utilize the services of maid-servants. Moreover, working wives tend to shop more in the evening and on weekends than do homemakers.

With the greater use of microwave ovens, it has been found that durables are substituted for the time wives spend in household activities as they become more involved in outside jobs. Rather, it was found that durables and wives time were complements i.e., the more time a working wife had to spend at home, the greater was her use of durable products. When working wives had less time to spend at home, they had less need for durable products, such as home appliances, lawn and garden equipment, sports equipment, and furniture.

The study found that working wives tended to solve time problem by utilizing one-use-goods e.g. (frozen dinners) and purchased services (e.g. meals away from home and child day care). The study has also found out that working does influence the likelihood that working wives purchase convenience foods and the most important single variable that affects the purchase of convenience foods is that the working wives do not enjoy preparing food or she may not have sufficient time to cook foods after a full-day work at job. Those who find cooking pleasurable or even stress relieving use fewer convenience foods and are also less likely to eat meals prepared outside the home.

Analysis

Null Hypothesis : There is no significant difference between working wives and housewives as regards role overload.

On the basis of response (questionnaire no. 4) of 500 working wives and 250 housewives, the 't' test was conducted and the result is presented in Table-2.

Table-2 : Results of t-Value With Significance Level

VARIABLE	t	df	Significance (2-tailed)
Role Overload	.168	491.805	.014

As $p<0.025$(Significance level), therefore we reject null hypothesis and conclude that significant difference exist between working wives and housewives regarding role overload. That is they experience different kind of role overload when both of them are working and maintaining the home front.

Factor Analysis Results

In this part we have conducted factor Analysis on the basis of Scale to measure Role Overload (Questionnaire No. 4). The results of Factor Analysis on the basis of the responses of the 460 working wives i.e. those who experience role overload in family activities and efforts have been presented in Tables 3 and 4. The 18 identified variables have been coded against a seven point Likert type scale. The Rotated Component Matrix (RCM) for the 18 variables has been used for measuring the role

overload. This has been obtained in eight iterations using SPSS (version 12). Initially, the KMO measures and Bartlelt's test have been conducted. The result of KMO (0.529) is greater than minimum of 0.50.At the same time Bartlelt's test of sphericity reveals the zero level of significance of the chi-square value which is less than the required level of significance of 0.05 percent. Both these measures indicate the validity of data for factor analysis. The factor analysis results in five important factors lead to role overload.The factor loadings of the variables in each factor, its reliability coefficient, its Eigen value and the percent of variation are explained in Table-4.

Table-3 : KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.529
Bartlett's Test of Sphericity	Approx. Chi-Square	*345.869
	df	153
	Sig.	.000

*Significant at 5% level

Table-4 : FACTOR ANALYSIS (Based on the responses of 460 i.e., 92% of the Working wives)

Statements	Factor Loadings	Eigen Value	% of Variance	Cumulative% of Variance
F1 : Scheduling of Household work		**6.636**	**27.824**	**27.824**
S17 : I think that performing all the household tasks becomes nearly impossible.	.641			
S07 : I feel I have to do things hastily and may be less carefully in order to get everything done.	.521			
S13. I can't ever seem to get catch up with my household work.	.688			
S09 : I find myself having to prepare priority lists to get done all the things I have to do. Otherwise I forget because I have so much to do.	.762			
S10 : Many a times I have to cancelappointments.	.580			
F2 : Meeting time constraint		**1.988**	**18.740**	**46.564**
S01 : I have to do things I don't really have the time and energy for.	.762			
S04 : I don't ever seem to have time for myself.	.600			

S11 : Sometimes I feel as if there are not enough hours in the day.	.719			
S16 : I never use any durables for my household activities even though there can be time constraint due to my work.	.547			
S15 : I think that when I am overloadded with work, the information acquisition activities are shortened and joint decision-making is minimal.	.518			
F3 : Expectations		**1.636**	**11.860**	**58.424**
S14 : There are times when I cannot meet everyone's expectation.	.545			
S03 : I need more hours in the day to do all the things that are expected of me.	.647			
S08 : I just can't find the energy in me to do all the things expected of me.	.568			
F4 : Fulfillment of Commitment		**1.761**	**9.832**	**68.254**
S02 : There are too many demands on my time.	.616			
S12 : I seem to have more commitments than some of the other wives/husbands I know.	.761			
S06 : I seem to have overextended myself in order to be able to finish everything I have to do.	.509			
F5 : Allocation and Sharing of household tasks		**1.503**	**5.591**	**73.845**
S18 : I think my workload can be reduced if household chores are divided between me and my husband/wife equally.	.608			
S05 : I think a maid–servant/servant can reduce my workload.	.723			

Factor 1 : Scheduling of household work

This is the most important factor of the overall sample and it alone accounts for 27.82% of the total variance. Five out of eighteen statements load on significantly to this factor. All statements represent a traditional role overload of working wives. The statements sum up the role in terms of scheduling of household work and job duties for the purpose of reducing the role overload and completion of all tasks in time.

Factor 2 : Meeting time constraint

This is the next important factor, which accounts for 18.740% of the variance. Five statements constitute this factor and the statements depict that women should give priority to time in order to complete household work and work outside in order to meet time constraint. The statements reveal that working wives cannot adjust with the job and home when her husband is not helping her in household work and the working wives have to take care of her children and her husband which a traditional outlook of the society. Usually where a wife works, she also has to keep the kitchen fires burning, the house spic and span, and the family satisfied. In order to accomplish everything, she must not only budget her time, but she must also be flexible, since she is expected to be available round the clock. Thus, she finds herself in paradoxical situation.

Factor 3 : Expectations

Three statements account for 11.86% of the variation. Members of the family expect a lot from the working wives. But she cannot meet everyone's expectation due to linkage between spheres of dual roles and role conflict. Some working wives are unable to take their children to school, attend functions and parent-teacher meeting, serve food at the right time, cook elaborate meals and take active part in festivals and social occasions like wedding of close relatives because at work place, they were engaged in extra activities and other group activities. These women reported that they fail to meet expectations of their family members. Moreover presence of children, who require attention and help in the daily routine, causes strains on the working wives.

Factor 4 : Fulfillment of Commitment

Three statements load on this factor and together account for 9.83% of the variance. The working wives cannot meet their commitments because their engagement in outside work. This work consumes most of their valuable time. The husbands give them broad guidelines about their proper sphere of work, their desirable behavior .The husbands view their wives as care-takers of their house and themselves. This paternalistic framework of relationship is readily shared by the working wife and taken to be a mechanism to overcome role-conflict.But in spite of that she fails to meet her commitment in home front and also in the work place.

Factor 5 : Allocation and Sharing of household tasks

Two statements load on to this factor and together account for 5.591% of the variance. The factor depicts that high-level of importance is assigned to occupational status of working wives and it is being increasingly felt that husbands should share household responsibilities to ease burden on working wives. Besides, they should be encouraged to choose technical and other occupations according to their ability and motivated to acquire top position in organizations. Also, working wives should be given adequate independence and freedom in all respects especially when they have to work outside the house. This factor in accumulation calls for increasing quality for women not only at the workplace but also in the house. Moreover, sharing of household responsibilities is equally correlated with the progress of society when women are attributed status equal to men.

Table-5 : Factors affecting role overload in family decision-making

Sl.	Mean Score among the respondents			
No.	Factors	Working wives	Husbands	t-Statistics
1.	Scheduling of household work.	5.071	4.688	-1.5459
2.	Meeting time constraint	6.01	5.672	2.7831*
3.	Expectations	6.04	5.889	-2.2096
4.	Fulfillment of Commitment	5.52	5.513	0.3494
5.	Allocation and Sharing of household tasks	6.054	6.135	-2.1776*

*Significant at 5% level

The factors leading to role overload and conflict in family decision making are narrated by factor analysis. The importance of each factor is examined with the help of the mean score of the various variables in the each factor. The factor scores on each factor has been computed among the working wives and housewives separately, in order to analyze the significant difference among the two groups of decision makers regarding their importance given on factor leading to their role overload and conflict. The 't' test had been administered and the resulted mean score of all five factors and its respective 't' statistics are shown in Table 5.

The highly perceived factors among the working wives are expectations of the family members and allocation and sharing of household tasks since their respective mean scores are 6.04 and 6.054. Among the housewives, these factors are allocation and sharing of household tasks and expectations, since their mean scores are 6.135 and 5.889 respectively. Regarding the importance given on the factors, the significant difference between the two groups working wives and housewives are noticed in the case of meeting time constraint and allocation and sharing of household tasks.

PART-II ANALYZING CONFLICT TO UNDERSTAND THE BEHAVIOUR OF WORKING WIVES IN FAMILY DECISION-MAKING

Role overload causes conflict between working wives and their husbands. Working wives disagree with their family members not only on role overload but also on several other issues. In this paper we have analyzed the various issues including the role overload which causes conflict in family decision-making and their resolving strategies. Family members may disagree about the desired end goals of purchase. Some working wives said that in choosing a family vacation, the husband may want to go somewhere for lazy relaxation, the working wife may want good shopping and night life, and the kids probably want adventure and excitement. Differences in end goals often create major conflict because very different choice alternatives are likely to be related to these incompatible ends. Serious negotiations may be required to resolve the conflict.

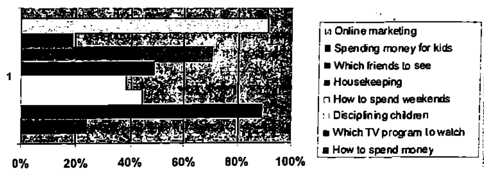
When it comes to making purchase decisions, working wives find themselves in disagreement with their husbands frequently about when to spend or save, how much to spend on some item, what color fits best, or where to buy something. Figure-2 which is based on the responses of the 500 working wives presents some of the issues on which working wives tend to disagree.

Marketers are interested in the relative amount of influence that a working wife has when it comes to family consumption choices. Some common issues on which working wives disagree with their husbands are shown below in figure-2 which is based on our questionnaire.

Management of conflict in family decision-making

Although serious conflicts in family purchase and financial decisions are rare, some form of family conflict is highly probable, because forming joint preference requires combining individual preference of family members. When various alternatives are being considered, working wives attempt to influence the other towards her preferred decision. A variety of influencing techniques are used depending upon the nature of purchase, the characteristics of working wives, participation in the purchase discussion, and its importance to the working wives.

Figure 2: Common Issues on which Working Wives Disagree with their Husbands



These situations during negotiation may result in a preference agreement or a compromise. Findings of such strategies have been shown in Table 6 which is based on our study.

Table-6 : Influencing strategies to overcome conflict

Strategies to Overcome Conflict	Strategies	% Of Working Wives
Using your superior information about decision alternative	Expert	12%
Use your position in the family	Legitimate	1.6%
Influence over the other spouse	Bargaining	50%
Offering reward to gain influence over the other spouse	Reward	16%
Use Emotional reactions	Emotion	14.8%
Try to persuade other spouse	Impression Management	5.6%

The above Table-6 describes several influencing strategies that have been identified in family decision-making research done by us.

On the basis of Table-6 it can be observed that 12% of the working wives adopt Expert strategies i.e., use their superior information about decision alternatives to avoid conflict in family purchase and financial decision-making process.50% of the working wives adopt Bargaining strategies to overcome conflict i.e., influence over the spouse. 16% use Reward strategies. 1.6% use Legitimate strategies, 5.6% use Impression management and 14.8% use emotional strategies i.e., use emotional reactions to overcome conflict in family purchases and financial decision-making process.

6. Conclusion and Suggestion

Working wives are definitely going to face more role overload in the near future date to their outside work away from home. As a result they will substitute more capital equipment and services for their household activities and efforts. In spite of that they should be encouraged to choose technical and other occupations according to their ability and motivated to acquire top position in the organization. Also, working wives should be given adequate independence and freedom in all respects especially when they have to work outside the house. Participative decision-making among family members was found to be associated with cognitive and relationship conflict. Conflict can damage the harmony and relationships of members in the family. The feminist movement influences gender role change both in and outside the family in multiple ways. Broadly speaking, the movement may be viewed as a social process focusing on female role identities and prescriptions. Its basic premise is that gender ascriptions produce power inequities in family systems where the male is the primary paid earner and the female is confined to domestic duties. Domestic work is viewed as important but is not well rewarded in money or status. So it can be concluded that, egalitarian decision making style between dual-career spouses can result in less conflict over home and career roles and more effective behaviours in both roles.

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Annexure

Part-I: Questionnaire for working wives and housewives

NAME : ADDRESS :

WARD NO :

1) Do you experience role overload? Yes ☐ No ☐

2) Do you substitute capital equipment for your efforts and activities in family?

3) What are the capital equipments and services you use to save time and energy?

4) A scale to Measure Role Overload

Statements	Strongly Agree (AS)	Agree Mostly (AM)	Agree Somewhat (AW)	Disagree Somewhat (DW)	Disagree Mostly (DM)	Disagree Strongly (DS)	DK/ CS
	7	6	5	4	3	2	1
1. I have to do things I don't really have the time and energy for.							
2. There are too many demands on my time							
3. I need more hours in the day to do all the things that are expected of me.							
4. I don't ever seem to have time for myself.							
5. I think a maid-servant can reduce my workload.							

Statements	Strongly Agree (AS)	Agree Mostly (AM)	Agree Somewhat (AW)	Disagree Somewhat (DW)	Disagree Mostly (DM)	Disagree Strongly (DS)	DK/ CS
	7	6	5	4	3	2	1
6. I seem to have overextended myself in order to be able to finish everything I have to do.							
7. I feel I have to do things hastily and may be less carefully in order to get everything done.							
8. I just can't find the energy in me to do all the things expected of me.							
9. I find myself having to prepare priority lists to get done all the things I have to do. Otherwise I forget because I have so much to do.							
10. Many a times I have to cancel appointments.							
11. Sometimes I feel as if there are not enough hours in the day.							
12. I seem to have more commitments than some of the other wives/husbands I know.							
13. I can't ever seem to get catch up with my household work.							
14. There are times when I cannot meet everyone's expectations.							
15. I think when I an overloaded with work, at that time information acquisition activities are shortened and joint decision-making is minimal.							

Statements	Strongly Agree (AS)	Agree Mostly (AM)	Agree Somewhat (AW)	Disagree Somewhat (DW)	Disagree Mostly (DM)	Disagree Strongly (DS)	DK/ CS
	7	6	5	4	3	2	1
16. I never use any durable for my household activities even though there can be time constraint due to my work.							
17. I think that performing all the household tasks becomes nearly impossible.							
18. I think my workload can be reduced if household chores are divided between me and my husband/wife equally.							
DK/CS=Don't Know/Can't say							

Part-II : Questionnaire for working wives only

ANALYZING CONFLICT TO UNDERSTAND THE BEHAVIOUR OF WORKING WIVES IN FAMILY DECISION-MAKING

i) How to spend money?

ii) Which TV program to watch?

iii) Disciplining children

iv) How to spend weekends?

v) Housekeeping

vi) Which friends to see?

vii) Spending money for kids

Viii) Online shopping

6. What influencing strategies you will adopt to overcome conflict?

i) Use position in the household

ii) Influence over the other spouse

iii) Offering reward to gain influence over the other spouse.

iv) Use emotional reactions.

v) Try to persuade other spouse

Micro, Small and Medium Enterprises (MSMEs) In India—Problems and Prospects

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Abstract : Micro, Small and Medium Enterprises (MSMEs) have emerged as a highly vibrant and dynamic sector of the Indian economy over the last five decades and not only played crucial role in providing large employment opportunities at comparatively lower capital cost but also helped in industrialization of rural and backward areas, thereby reducing regional imbalances and assuring more equitable distribution of national income and wealth. MSMEs are complementary to large industries as ancillary units and this sector contributes enormously to the socioeconomic development of the country. It contributes significantly to India's GDP and export earnings besides meeting the social objectives including that of providing employment opportunities to millions of people across the country. With the introduction of reform measures in India since 1991, the Government has withdrawn many protective policies for the MSMEs and introduced promotional policies to increase competitiveness of the sector. According to the fourth all India census of MSME, it has shown constant growth rate of more than 10% every year till 2010-11, whereas in the year 2011-12 the growth rate was 19% which is approximately twice the growth rate recorded for the previous years.

This paper analyzes the definition of MSMEs, the role and performance of MSMEs in Indian economy and government policies towards MSMEs as well as the various challenges and opportunities associated with MSMEs in India.

Key-words : Micro, small and medium enterprises, role and performance, Government policies, problems and prospects.

1. Introduction

Micro, Small and Medium Enterprises (MSMEs) have been globally considered as an engine of economic growth and key instruments for promoting equitable development. The labour intensity of this sector is much higher than that of large enterprises as it constitutes more than 90% of total enterprises in most of the economies and are credited with generating the highest rate of employment growth and account for a major share of industrial production and exports. With its agility and dynamism, this sector has shown admirable innovativeness and adaptability to survive the recent economic downturn and recession. The MSMEs in India is highly heterogeneous in terms of the size of the enterprises, variety of products and services and levels of technology. This sector caters to the needs of small entrepreneurs with lower capital and thus renders enormous service to the rural and backward classes who are empowered to contribute to the overall national growth. In recent years, the MSMEs play an important

role in the overall industrial economy of the country and has consistently registered higher growth rate compared to the overall industrial sector.

2. Literature Review

Mali (1998) observed that micro, small and medium enterprises have to face increasing competition in the present scenario of globalization. They have to specifically improve themselves in the fields of management, marketing, product diversification, infrastructural development, technological up-gradation. Moreover, new small and medium enterprises may have to move from slow growth area to the high growth area and they have to form strategic alliance with entrepreneurs of neighbouring countries.

Subrahmanya (2004) highlighted the impact of globalization and domestic reforms on small-scale industries sector by emphasizing that small industry had suffered in terms of growth of units, employment, output and exports. He also suggested that the focus must be turned to technology development and strengthening of financial infrastructure in order to make Indian small industry internationally competitive and contribute to national income and employment. Sudan (2005) described the challenges in Micro and Small Scale Enterprises Development and policy issues by raising different questions related to MSMEs. Rathod (2007) analysed the growth and pattern of the SSI sector and identified the reasons for success and failures, evaluated the impact of globalization on SSIs and export opportunity and identified the barriers and constraints that SSIs were facing to cope with globalization. Singh, Verma and Anjum (2012) analyzed the performance of MSMEs in India and focused on policy changes which have opened new opportunities for this sector and concluded that MSME sector has made good progress in terms of number of MSME units, production and employment levels. Venkatesh and Muthiah (2012) found that the role of MSMEs in the industrial sector is growing rapidly and they have become a thrust area for future growth. They emphasized that nurturing MSME sector is essential for the economic well-being of the nation. Srinivas (2013) analysed about the performance of MSMEs, their contribution in India's economic growth, identified the number of enterprises, employment in MSMEs and concluded that MSMEs play a significant role in inclusive growth of Indian economy.

3. Objective of the Study

The major objectives of the present study are to—

- analyse the conceptual framework, growth and performance trends of MSMEs in Indian economic development;
- identify the sickness, various strategies adopted for the revival of viable units relating to MSMEs;
- identify the various problems and future prospects associated with MSMEs;
- evaluate the government initiatives to revitalize the Indian MSMEs;
- finally, make recommendations for further improvement of MSMEs in Indian scenario.

4. Methodology

The study is descriptive in nature and based on secondary data. Relevant information have been collected from various research papers, journals and magazines of national and international publications, various issues of RBI, annual reports from the Ministry of MSME, handbook of statistics of Indian economy and also includes websites of both public and private sector banks.

5. MSMEs—Conceptual Framework

MSMEs constitute over 90% of total enterprises in most of the economies and are credited with generating the highest rates of employment growth and account for a major share of industrial production and exports. In recent years, the MSME sector has consistently registered higher growth rate compared to the overall industrial sector. In accordance with the provisions of Micro, Small & Medium Enterprises Development (MSMED) Act, 2006 MSMEs are classified in two categories—manufacturing and service.

I. Manufacturing Enterprises—The enterprises engaged in the manufacture or production of goods pertaining to any industry specified in the first schedule to the industries (Development and Regulation) Act, 1951. The Manufacturing Enterprise are defined in terms of investment in Plant & Machinery.

II. Service Enterprises—The enterprises engaged in providing or rendering of services and are defined in terms of investment in equipment.

The limit for investment in plant and machinery/equipment for manufacturing/service enterprises, as notified, vide S.O. 1642(E) dtd.29-09-2006 are given in Table-1.

Table-1 : Classification of Micro, Small and Medium Enterprises (MSMEs)

Manufacturing Sector		Service Sector	
Enterprise	**Ceiling on Investment in Plant and Machinery**	**Enterprise**	**Ceiling on Investment in Equipment**
Micro	Does not exceed twenty five lakh rupees	*Micro*	Does not exceed ten lakh rupees
Small	More than twenty five lakh rupees but does not exceed five crore rupees	*Small*	More than ten lakh rupees but does not exceed two crore rupees
Medium	More than five crore rupees but does not exceed ten crore rupees	*Medium*	More than two crore rupees but does not exceed five crore rupees

Source : MSMED Act, 2006

MSMEs are established in almost all major sectors in the Indian industry such as food processing, textiles and garments, agricultural inputs, leather goods, chemical and pharmaceuticals, electrical, sports goods, plastic products, electro-medical equipments and computer software etc.

6. Growth and Performance Trends of MSMEs in Indian Economic Development

It can be observed from Table 2 that the total number of MSMEs has increased from 101.1 lakh units in 2000-2001 to 447.73 lakh units in 2011-2012. There has been a steady growth in fixed investments, production and employment during 2011-2012 over 2000-2001. The fixed investment and production increased from Rs. 1,46,845 crores and Rs. 2,61,297 crores in 2000-2001 to Rs. 11,76,939 crore and Rs. 18,34,332 crore in 2011-2012 respectively at current prices. Similarly, there has been a steady increase of employment in MSMEs from 238.73 lakh in 2000-2001 to 1012.59 lakhs in 2011-2012.

Table-2 : Growth of Indian MSMEs

Year	Total No. of working MSMEs units (in lakh)	Fixed Investment (Rs. Crore)	Production at current price (Rs. Crores)	Employment generated (lakh persons)
2000-01	101.10	146845	261297	238.73
2001-02	105.21	154389	282270	249.33
2002-03	109.49	162317	314850	260.21
2003-04	113.95	170219	364547	271.42
2004-05	118.59	178699	429796	282.57
2005-06	123.42	188113	497842	294.91
2006-07	261.01	500758	709398	594.61
2007-08	272.79	558190	790759	626.34
2008-09	285.16	621753	880805	659.35
2009-10	298.10	693835	982919	695.38
2010-11	311.52	773487	1095758	732.17
2011-12	447.73	1176939	1834332	1012.59
Source : RBI and Ministry of Micro, Small and Medium Enterprise (MSMEs), GOI (2012-13)				

Table-3 shows that the contribution of the MSMEs to total industrial production has increased from 39.71% in 2000-2001 to 45.12% in 2011-2012. Similarly, the contribution of the MSMEs to the gross domestic product (GDP) has increased from 6.04% in 2000-2001 to 8.52% in 2011-2012 which justifies the need for continuous efforts to sustain the progress of MSME sector.

Table 3 : Contribution of MSMEs

Year	Total Industrial Production (%)	Gross Domestic Product (%)
2000-01	39.71	6.04
2001-02	39.12	5.77
2002-03	38.89	5.91
2003-04	38.74	5.79
2004-05	38.62	5.84
2005-06	38.56	5.83
2006-07	45.62	7.20
2007-08	45.24	8.00
2008-09	44.86	8.72
2009-10	45.10	7.98
2010-11	44.96	8.10
2011-12	45.12	8.52

Source : RBI and Ministry of Micro, Small and Medium Enterprise (2012-13).

Financing to MSMEs has always been the priority area for the policy makers in the country. Considering the ability of employment generation and contribution to GDP, Government of India formulated MSMED Act, 2006. Since then banks have been able to direct their MSMEs lending activity in a considerable manner.

Table-4 : Status of Outstanding Bank Credit to MSMEs in India (Rs. in Crores)

Year as on last reporting Friday of March	Banks			All Scheduled Commercial Banks	Growth (%)
	Public Sector	Private Sector	Foreign		
2004-05	67800	8592	6907	83498	—
2005-06	82438	10421	8430	101285	21.30
2006-07	102550	13136	11637	127323	25.71
2007-08	151137	46912	15489	213538	67.71
2008-09	191408	46656	18063	256127	19.94
2009-10	278398	64534	21069	364001	42.12
2010-11	376625	87857	21461	485943	33.50
2011-12	395976	105085	19839	520900	7.19

Source : Annual Report of Ministry of MSME (2012-13)

Table 4 shows that during the year 2011-12, the total outstanding credit by all scheduled commercial banks to MSMEs in India stood at Rs. 5,20,900 crores. Among bank categories, public and private sector banks have registered impressive growth in MSMEs lending in the year 2011-12. However, public sector banks account for a major share compared to private and foreign banks. In the year 2005-06, there was a growth of 21.30% in comparison to the previous year 2004-05. Highest growth of credit achieved in the year 2007-08 i.e. 67.71% with least growth i.e. 7.19% seen during the year 2011-12.

7. Sickness in MSMEs

The problem of industrial sickness is persisting in MSMEs despite its appreciable performance and significant contribution in Indian economy. The MSMEs should be considered as sick if it has at the end of any accounting year accumulated losses to or exceeding 50% of its peak net worth in the immediately preceding five accounting years. (Bihar Chambers of Commerce, Sept. 1989)

Table-5 : Sickness Relating to MSMEs in India

Year	Total MSME Units (in lakh)	Sick Units (in lakh)	%	Total Investment (Rs. in crores)	Investment in Sick Units (Rs. in crore)	%
2000-01	101.10	2.49	2.46	146845	4505.54	3.07
2001-02	105.21	1.77	1.68	154349	4818.95	3.12
2002-03	109.49	1.67	1.53	162317	5706.35	3.52
2003-04	113.95	1.43	1.25	170219	5284.54	3.10
2004-05	118.59	1.38	1.16	178699	5380.13	3.01
2005-06	123.42	1.26	1.02	188113	4981.13	2.64
2006-07	261.01	1.14	0.43	500758	5266.65	1.05
2007-08	272.79	0.85	0.31	558190	3082.72	0.58
2008-09	285.16	1.02	0.36	621753	3308.00	0.54
2009-10	298.08	0.77	0.26	693835	5231.15	0.75
2010-11	311.52	0.99	0.29	773487	5211.25	0.67

Source : Govt. of India, Ministry of MSMEs Annual Report (2011-2012), RBI, Handbook of statistics on Indian Economy (2011-2012)

It can be noticed from Table 5, that there were 101.10 lakhs MSMEs units in 2000-01 and their member has steadily increased year by year to 311.52 lakhs units in 2010-11. The percentage of sick units among the MSMEs was 2.46% in 2000-01 and it gradually declined to 0.29% level in 2010-11. The total investment in MSMEs units was reported at Rs.1,46,845 crore in 2000-01, of which investment incurred on sick units has been worked out to 3.07%. The maximum percentage of 3.52% was observed during the year 2002-03.

8. Viability of Sick Units

A unit may be regarded as potentially viable if it would be in a position after implementing a relief package spread over a period not exceeding five year from the commencement of the package from banks, financial institutions, Government (central and state) and other concerned agencies. Based on the norms, the banks/financial institutions have to decide whether a sick small enterprise is potentially viable or not. While identifying and implementing the rehabilitation package, banks/ FIs are advised to do 'holding operation' for a period of six months. This will allow small scale units to draw funds from the cash credit account at least to the extent of their deposit of sale proceeds during the period of such 'holding operation'.

The details of potentially viable MSMEs unit in India are presented in Table 6. As at the end of March 2010, there were 77,723 sick MSMEs unit in the country. But at the end of March, 2011, there has been an increase in the number of sick MSMEs unit to 90,141. The number of sick MSMEs and the enterprises under nursing with the amount out-standing against them from March 2005 to March 2012 are as under—

Table-6 : Potentially viable MSMEs unit in India

At the end of March/ Year	Total sick MSMEs unit		Potentially viable		Viable units under nursing	
	No. of Units (in lakh)	Amount outstanding (Rs. in crore)	No. of Units (in lakh)	Amount outstanding (Rs. in crore)	No. of Units (in lakh)	Amount outstanding (Rs. in crore)
2005	138041	5380.13	3922	434.67	2080	259.93
2006	126824	4981.13	4594	498.16	915	233.77
2007	114132	5266.65	4287	427.46	588	268.93
2008	85187	3082.72	4210	246.88	1262	126.92
2009	102951	3308.00	8168	731.68	2330	424.26
2010	77723	5231.15	9160	964.75	2360	478.84
2011	90141	5211.25	7118	1112.98	4698	518.30
2012	85591	6790.00	10315	1721	6648	468.00

Source : RBI Bulletin, 2011-2012

From the above table, it can be observed that at the end of March 2010, banks put only 2360 units under nursing which constituted approximately 3% of the total sick unit. Number of enterprises put under nursing as percentage of total sick MSMEs at 5.2% (approx.) at the end of March-2011 which is very low.

Companies Act 2013—It covers the revival and rehabilitation of all companies, irrespective of their sector. In accordance with the requirement of section 253 of the Act, 2013 a company is assessed to be sick on a demand by the secured creditors of a company representing 50% or more

of its outstanding amount of debt—if the company has failed to pay the debt within a period of 30 days of the service of the notice of demand as well as failed to secure or compound the debt to the reasonable satisfaction of the creditors. To speed up the revival and rehabilitation process, the Revival and Rehabilitation of sick companies under Companies Act. 2013 provides a one year time period for the finalization of the rehabilitation plan.

9. Major Problems faced by the MSMEs

MSMEs are very important in the economic growth of India but consequently it faces a number of problems which are as follows.

i. Lack of availability of adequate and timely credit from banks-Presently, high interest rates, high risk perception among the banks, unreasonable collateral demand, restrictive and conditional working capital limits and huge procedural transaction cost often creates problem for the MSMEs in availing easy credit from the banks as it does not have any alternative sources of finance.

ii. Complex labour laws and red tape—All the laws and regulations related to the aspects of manufacturing and service units of MSMEs are very complex and practically very difficult to comply with.

iii. Poor infrastructure—MSMEs in India are either located in industrial estates set up many decades ago or have come up in an unorganized manner in rural areas. Inadequate and unreliable infrastructure including power, roads, water etc. acts as a handicap in the emerging global market resulting to lower production capacity and higher production cost.

iv. Lack of marketing and promotional support—MSMEs in India faces the problem of marketing its products due to insufficient finance and market intelligence amongst the entrepreneurs for their business development, unlike the multinational companies. Low technological level and lack of access to modern technology had a profound impact on the competitiveness of the MSMEs.

v. Issues relating to taxation (direct and indirect) and regulatory norms—Rigid, complex as well as cumbersome and time consuming regulatory norms create unnecessary problems in the functioning of MSMEs and therefore cost of doing business is much higher in India in comparison to other countries.

10. Initiatives Undertaken by the Government

The Ministry of MSME implements the following schemes and programmes for the upgradation of technology to revitalize the promotion of MSMEs.

i. ISO 9000/ISO 14001 certification reimbursement schemes—This scheme is introduced in March, 1994 to enhance the competitive strength of the MSMEs by way of technological upgradation, quality improvement and better environment or management. For acquiring quality management system-ISO 9000 certification or environment management system-ISO 14001 certification, this scheme reimburses 75% of the fees, subject to a maximum of Rs. 75,000.

ii. Credit Linked Capital Subsidy Scheme (CLCSS)—It aims at facilitating technology upgradation by providing 15% upfront capital subsidy to manufacturing MSMEs on institutional finance up to Rs. 1 crore availed by them for induction of well-established and improved technologies in the specified sub-sectors/products approved under the scheme.

iii. The MSE-Cluster Development Programme (MSE-CDP)—This programme is implemented for holistic development of selected MSEs clusters through value chain and supply chain management (skill development, technology upgradation of the enterprises, improved credit delivery, marketing support, setting up of common facility centres) based on diagnostic studies carried out in consultation with cluster units on co-operative basis.

iv. Laghu Udyami credit card scheme (LUCCS)—It was introduced and implemented by the banks for providing borrower friendly credit facilities to small business, retail traders, artisans, small entrepreneurs, professionals and other self employed persons including those in the small sector in November, 2001. Credit limit per enterprise has been increased from Rs. 2 to Rs. 10 lakhs having satisfactory record only.

v. National Equity Fund Scheme (NEF)—This scheme provide equity type (cost should not exceed Rs. 50 lakhs) support to entrepreneurs for setting up new projects in small industrial sector for undertaking expansion, modernization, technology up gradation and diversification of existing MSEs and for rehabilitation of viable sick units.

vi. Credit Guarantee Fund Trust Scheme for Micro and Small Industries (CGFTSI)—This scheme covers collateral free credit facility to new and existing MSMEs upto a maximum limit of Rs.50 lakh to realize the small entrepreneur's dream of making it big and successful.

vii. Scheme of Fund for Regeneration of Traditional Industries (SFURTI)—To establish a regenerated, holistic, sustainable and replicable model of integrated cluster-based development of traditional industries in khadi, village and coir sectors with an intention to make more productive and competitive and increases the employment opportunities in rural and semi-urban areas, this scheme was launched in 2005.

11. Prospects in MSMEs

The lots of potential are available in the field of MSMEs. The prospects of properly developed MSME sector are:

i) employment generation, ii) customer satisfaction oriented, iii) minimization of regional imbalance, iv) enhancement of export and finally, v) attraction to the foreign investment.

12. Recommendations

To enable MSMEs to be competitive in domestic and global market, a few recommendations are given below to overcome the problems.

- Providing credit to the MSMEs at base rate and devise a strategy for cost effective finance and improve the delivery points for credit to MSMEs in terms of quantity and quality.
- Providing better infrastructure facilities like roads, rail, ports, airports, water, sewage and power should be ensured.

- Enhancing skill among the work force to meet industry requirements.
- Relaxing complex labour laws for better compliance.
- Suggesting measures to prevent industrial sickness and revival of viable sick units.
- Adopting total quality management and ISO standards in MSMEs units.
- Promoting quality competitiveness and research and development for strengthening the MSMEs units.
- Treating the employees of MSMEs as an asset and give them recognition with an eye towards the need to improve their skill.

13. Conclusion

In a nutshell, MSMEs have emerged as an engine of growth in Indian economy by way of their significant contribution to GDP and industrial production. The MSMEs needs to improve its productivity and quality, reduce costs and innovate. Government policy should help MSMEs to increase their efficiency and competitiveness within a market driven economy. In order to prevent the major sickness in MSMEs, new approaches like the cluster approach or harnessing the power of industry association should be encouraged.

To keep this growth engine on the right path and direction, it is necessary to put emphasis on the formulation of friendly policies, conducive operating environment, improvement of proper infrastructure, securing peace and security, arranging proper finance, efficient manager and arranging appropriate modern technology for MSMEs.

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Impact of Training and Development Programmes on Indian Bank— A Study

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Abstract : There have come about many changes in India, especially in the banking sector. Thanks to the new economic policy that was introduced during the early nineties. The merging business profile of banks now include non-traditional areas like merchant banking, mutual funds, newer financial services, personal investment counseling, factoring, venture capital and possible consultancy and research services. The banks are continuously making innovations in their operational fields and thus the profile of these banks have undergone major transformations. It calls for new knowledge, skills and attitudes, and training system will have to stand up to these challenges and it will definitely demand for changes in approaches to training as well. The new technology will transform the skills structure in banks. The present study is an attempt to evaluate and compare the training and development endeavours in the public and private sector banks in India. The study finds that significant differences exist between the two categories of banks regarding the training provided to its employees. But the differences are related to only certain aspects and it is not universal. Based on the study it will be inapt to say that the training approaches of a particular type of bank are significantly enhanced or shoddier compared to the other.

Key-words : Training, banks, public sector/private sector.

1. Introduction

There is an old saying "If you think training is expensive....Try ignorance". A more recent version has a sharper message— "What if I train my staff and they leave?". To which answer is "what if you do not train them and they stay". In today's competitive world no employer can afford the staff who are not efficient. Yet many organizations still appear reluctant to invest in training the members to make them more efficient. The primary interest in a study about the future is in looking for a group of characteristics shared by the better banks that might serve to predict the future success of others. That common trait is emphasis on training. Competent employees do not remain competent forever. Skills deteriorate and can become obsolete. That is why modern organizations spend crores or crores each year on formal training. Intensified competition, technological changes and search for improved productivity are motivating management to increase expenditures for training. Today in the age of globalization, people at all levels in organizations are involved in formal training. Training is being recognized increasingly as a key to labour markets change, some jobs become obsolete and new ones are created. The new jobs require liberated workers. In a flexible economy that is well positioned to take advantages of change, people will need to change jobs, perhaps many times. Hence workers need continuously to acquire new skills and qualifications. On going development is today's new form of job security. People need to learn continuously. By developing, stretching and continually challenging themselves, employees can build skill base, reputation and networks of contacts which will make them fit to be always 'employable'.

2. Materials and Methods

For any research work it is very necessary to get huge materials related to the selected topic. This research article has been prepared with the help of various sources–both primary and secondary journals, periodicals also constitute the source of information, books of reputed authors have been used as secondary source to prepare this research article. Some materials have been drawn from the available website. The method used is analytic and descriptive and attempt has been made to present the study in a simple way.

3. Results and Discussions

The study finds that there are significant differences between public sector banks and private sector banks regarding the sex composition, education levels, the rural-urban proportion of branches, the age profile of employees, banking experience, the clerical officer composition of the staff, availability of online training etc. but the number of training programs provided there has no statistically significant difference. It is found that in the case of public sector banks more number of women is working, the employees are having more banking experiences. They attend more training programs and they are more interested in the bank tests. Most of the private banks' branches are in urban area, large number of management graduates are working in them. Their employers are younger. They do not have clerical staff and they get more online training. The two categories of respondents agree that the bank training should not be a one time affair. But it should be continuous. They do not think that it is over with one training programme. According to the respondents "retraining" is "missing". Training is not systematically planned according to the need of the situation and through training employees are able to gain expertise only in few banking areas. In the case of public sector banks, the most favoured training objective is to familiarize with new work practices like computerization etc. But for the private banks it is to equip the staff with more skills to meet the future challenges. A majority of the respondents believe that there is significant extent of integration between business goals and training objectives. There are no statistically significant differences. Manpower planning department think that comprehensive man power planning system exists in the organization.

Private Sector Banks

Operatives, sales and marketing are the three major divisions of activities in private banks. Even though it varies according to position, test and interview are the most common recruitment mechanism. Direct recruitment from other organizations is another method used for recruitment and selection of employees. Degree is the entry level qualification for the private sector bank employees. An MBA is preferred, more than consistent above average academic and career performance is the most important aspect. The employee supervision system is very effective as most of the elements are automatic and online. It is usually said that if you achieve your targets, everything else is okay. Some of the different categories of training provided are on the job, class room training and online. In one of the banks a specialized on line learning matrix is being developed. In some of the banks, class room training is provided and online test is conducted once in every three months. Behavioral Sciences training is usually provided by

outsourced staff and product training by senior officers. There is a mixture of own training and training outsourcing. As far as private banks are concerned, it is refreshing fact that there is a promotion possibility all the way up to chairman of the bank. An employee who is consistently performing well will have the chance to go up in the ladder. Such a non bureaucratic context which encourages efficiency and merit turns out to be extremely motivating to the employees. The work time in the private banks is not as rigid as we see in the case of public sector banks. However, it seems that in most of the situations, the flexible work time turns out to be detrimental to the employees. Generally, it can be said that the work atmosphere in private banks is more stressful but that depends on the nature of the employees. One should be ready to bear with the targets, results, the pressure of time and constant appraisals. The private banks claim that they do not have any clerical staff. It is not because that there is no clerical work but because the work is not divided into clerical and non-clerical. The person who is responsible to do something will have to do everything related to it and all the work related to it is considered to be the normal banking work. The focus is on the specific work to be done. The private banks definitely provide a fast track growth for dynamic young professionals besides providing a challenging work environment; one gets to have a cross-functional exposure along with remuneration par with the industry. The absence of trade unions and associations is a feature of the new bank work culture. Facilities like trekking club, photography club, Saturday kids club for the children of the employees which turns out to be a place to learn, to unwind and have a lot of fun, fitness centre, health services, homes in the better known vacation spots all over the country, scholarship schemes for the children of the employees are provided in important centers. Computerized internal control systems are developed so that the work done by the subordinate is monitored by the superior in private banks. Private Banks encourage and focus on innovations and it is frequent and open to all. Any employee can give his/her own innovative ideas but will be implemented only if it ensures positive financial results. The new competencies possessed by an old banker include knowledge of market and product, excellent communication and interpersonal skills, anticipation, innovation, quick action, reliability, integrity and quality of work.

Challenges before the public sector banks in the new millennium

Some of the challenges to be overcome by public sector banks are :—

1. Competition—One of the most important process initiated by economic liberalization and banking reforms is competition which has arisen due to easing of the entry norms of private and foreign banks. Eight new generation (private) banks, foreign banks with around 245 branches are operating as on September 2005 in the urban metro areas with benefit of easy foreign capital and technology products. The saving grace for the public sector banks in the absence of the new generation banks and foreign banks from the semi urban and rural markets. The recent emphasis of the Government for the rural projects including infrastructure projects offer exclusive avenues to the public sector banks to expand their business.

2. Productivity—One of the areas which has not received the full attention of the bank management in the past is HR related issues especially in the context of need for restructuring and rationalization of voluntary retirement schemes (VRS). The most important factor in connection with labour in the public sector banks is their low productivity. The low productivity is due to first huge surplus manpower, secondly the absence of good work culture and thirdly lack of motivation in otherwise monotonous work.
3. Disintermediation—Another important offshoot of the banking reform is the process of disintermediation under which corporate access resources from each other without the intervention of banks. This route is often taken by the blue chip companies, which were the traditional clients of public sector banks. As a result the market share of the public sector banks changed both in respect of deposits and the changing customers. The life style of the companies is fast changing and so are their expectations. Computerization helps inter-alia in improving the customer service by offering speedier services and introducing new and complex products, it improves staff productivity, volume growth, feedback and monitoring of the operations. The tele-banking, anywhere banking, virtual or internet banking, ATM cards, credit cards and the interest swap, forward rate agreements etc. are some of the products innovated by the Indian banks through technology. The rather tardy progress in the area has been due to initial reservation of the staff unions against computerization and the existence of a large number of branches in the rural areas. Despite these problems the public sector banks are facing the challenges of catering to the sophisticated customers in the urban area and the traditional customers in the rural areas.
4. Legal Reforms—Our legal frame work has not been touched till now by the reform process. It is imperative that appropriate amendments are carried out immediately in various laws such as Sick Industrial Companies (Special provision) Act 1985 (SICA), Urban Land Ceiling Act, Foreign Exchange Regulation Act, Free Closure Laws, Recovery of debts due to Banks and financial institutions etc. to enable the public sector banks to deal with the cancerous problems of Non Performing Assets more effectively.

The History and Evaluation of Training in Indian Banks

Institutionalized system of training in the banking industry commenced in India in 1954 with the establishment of the Banker's Training College (BTC). The Imperial Bank of India (State Bank of India—SBI) also set up three schools almost the same time to train probationary officers in Kolkata, Mumbai and Chennai. The focus of training curriculum until early 1960, however, was on hard core principles and techniques of banking and the target group were entry level officers and branch managers. Nationalization of banks in 1969 ushered the concept of mass banking followed by phenomenal expansion of branches, number of employees and diversification of portfolios etc. The banking industry responded to these challenges by expanding in house training facilities, setting up an apex level institute, National Institute of Bank Management (NIBM) to specially cater to the felt needs of entire industry. Sponsoring large number of officers to reputed management institutes and professional bodies within and outside the country, multitude of institutions, training programmes

and large number of officers and staff members trained over the years is a clear indication of the popularity of the training and development activities in public sector banks. The analysis of the available data on training in public sector banks reveals that, in quantitative terms, they have very impressive records. Why the net impact of the massive effort and huge investment made have failed to make desired impact on individual and collective performance and overall business results is not a secret. Absence of well articulated and shared Human Resource Development (HRD) vision, mission and long term perspectives, glaring inadequacies in scientific analysis of training methodology, availability based sponsorship to training programme, over emphasis on concepts and theoretical aspects of banking, quality of trainers and near absence of post training follow-up etc., are to a very extent, responsible for sub optimal results achieved by training. Observations by the Narasimham Committee on banking reforms in 1998 are very apt. It urges the management of Indian banks to review the changing training needs in individual banks keeping in mind their own business environment and to address these urgently. Although the industry has impressive number of training establishments, the training activities have not been able to effectively care to the needs of the industry fully. A close examination of the state of affairs regarding training in bank indicates that the real reason for this is elsewhere. Some of them are:—

- lack of conviction of the concept of training,
- lack of top management support,
- improper selection of trainees,
- ineffective use of training methodologies, and
- undesirable pressure for quantity rather than quality.

The emerging training scenarios in banks and its effect on bank employees with the impact of globalization

The banking system in India is currently poised for far reaching change. The emerging business profile of banks would include non traditional areas like merchant banking, mutual funds, newer financial services, personal investment counseling, factoring, venture capital and possible consultancy and research services. Besides this, to be on the top, banks will have to launch new activities. They will necessarily have to be innovative. The immediate and possible distant changes in the environment will make Indian banking more complex as the profile of these banks will undergo major transformation, while they continue to engage themselves in conventional banking, they will also enter areas of modern business ventures. These changes will call for new knowledge, skill and attitudes, and training system will have to stand up to these challenges. No Indian bank can survive without being up to date with the latest developments. Indication to this effect is visible. If the banks go in for the enhanced micro electronic assistance for its multifarious operations, it will definitely call for changes in approaches to training. It is a fact that most significant effect of diversification and technological revolution in the sphere of skill with new line of business, product diversification and widespread technology adoptions, the type of personnel required in handling jobs undermost complex and in competitive conditions will require skills different from those required for

traditional type of business. To be competitive managers will have to match international quality and performance standards. The impact of technology on HR in banking and insurance companies is tremendous. In a study, the group of researchers compared the old and new competencies needed to survive in the changed atmosphere. Table 1 and Table 2 summarize the information.

Table-1

Sl. No.	Old Competencies	New Competencies
1.	Ability to operate in well defined and stable environment.	Ability to operate in ill defined and ever changing environment.
2.	Capacity to deal with repetitive, straight forward and concrete work processes.	Capacity to deal with non-routine and abstract work processes.
3.	Ability to operate in supervised work environment.	Ability to handle decisions and responsibilities.
4.	Isolated work.	Group work and interactive work.
5.	Ability to operate within narrow geographical and time horizons.	System wide understanding, ability to operate within expanding geographical and time horizons.
6.	Broad unspecified knowledge.	Specified knowledge.
7.	Procedural competencies.	Customer assistance oriented competencies.

Source: Swain, B.K. "Revamping Indian Banks through Dynamic HR policies", Human Resource Management Bank Economics Conference 2003.

The new competencies to operate in the ever changing environment and the capacity to deal with non-routine work process can only effectively respond to the process of deregulation and globalization of banking. Similarly, ability to handle responsibilities and to operate in the expanding geographical and time horizons is the hallmark of emerging competencies. In addition, the changing social values with which the new generation of employees has been brought up have given them different value orientation. A recent study on the work goals of the bank employees clearly indicates that besides good pay and security, ranked as number one and two respectively, other aspects like opportunity to learn, opportunity for up gradation, interesting work, match between ability and work also received fairly a high level in ranking work goals. Ninety percent of the respondents in this were below 40 years of age. This indicates that the value orientation of the bank employees is also changing. All these changes will necessitate the training system in banks to reorient its approaches and priorities so that training activities will become an essential part of a strategic human resource management in banks. If this linkage is not properly established, training activities will further degenerate into mere routine rituals.

Table-2 : Work Goals of Bank Employees

Sl. No.	It is important that your work life contains	Mean value assigned	Rank Assigned
1.	Good Pay	7.89	1
2.	Job Security	7.56	2
3.	Opportunity to learn	7.06	3
4.	Opportunity for upgradation	6.81	4
5.	Interesting Work	6.49	5
6.	Match between job and ability	6.18	6
7.	Good interpersonal relations	5.84	7
8.	Good physical working conditions	4.3	8
9.	More Autonomy	4.93	9
10.	Love of variety	4.93	10
11.	Convenient work hours	4.65	11

Source : Mankidy, A. and J. Mankidy, "Meaning of working : A study of Bank employees".

The training system in the banking industry has strong structural base, and has capabilities to handle training in large numbers. Training system of nationalized banks alone has the capacity to train about 7000 employees at a time. The system has also developed several innovative activities in the training area such as on location training, manager to messenger program etc. Only when training becomes vibrant, the organizations will be able to meet the challenges emerging from the changing environment. Specifically, the role of the bank training colleges has to be substantially redefined. The colleges have to move away from the usual 'head count'—oriented training activities to competence building processes. This would get the training colleges to get actively involved in the whole gamut of training process starting from identification of training effectiveness and its benefits to the end users—the internal and external customers. This linkage would make training interventions meaningful to bank organizations. Training is essential ingredient to improve the quality of officers and managers. Training prepares employees at different levels to acquire new competencies in critical areas like computers, merchant banking, international banking, treasury financial services etc. and to operate effectively in ever changing environment. Individual banks are required to undertake review of existing training system as a whole in the context of newly emerging training needs and examine adequacy of courses, existing infrastructure, faculty development, training materials and relevancy of teaching methodologies etc. In the present scenario, banks have to develop a comprehensive training policy and demonstrate their commitment for training. Both systems for alternative methodology for classroom training and on the job training have to be strengthened. Time bound frame work for developing a pool of competent and trained officers in the areas of credit, merchant banking, international banking, foreign exchange dealings and financial services etc. should be created.

4. Conclusion

With the new line of business, product diversification and wide spread technology adoption both private sector banks and public sector banks have given a lot of attention on training and employee development programmes. Now the new competencies have understood that to survive in this global era, they need to upgrade themselves time to time. Tremendous change in attitudes of bank employees is being seen at present. They are focusing more on group work, customer assistance and have developed specialized knowledge, system wide understanding, ability to operate within expanding geographical and time horizons. A recent study on the work goals of the bank employees clearly indicates that, besides good pay and security, other aspects like opportunity to learn, opportunity for up gradation, interesting work, match between ability and work matter equally. Ninety percent of the respondents in this study were 40 years of age. This indicates that the volume orientation of the bank employees has also changed. These all changes are due to the impact of training and development programmes which have obviously become the mool mantra to survive in this new google era.

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Problems of Coir Industry in West Bengal : An Analysis

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Abstract : West Bengal is one of the important coconut producing states in India. But maximum of the coconut husk is either discarded or used as fuel due to lack of awareness among the people. Only about 20% of the husk used for coir extraction. Though there are number of coir units in West Bengal but a few of them have registered their units under the Coir Board. Several initiatives have been taken by the Governments and the Coir Board to promote this industry. Still coir industry is facing a lot of problems in India as well in West Bengal. The present study tries to examine the problems of coir industry in West Bengal. The registered coir units have been considered to analyse the problems of coir industry in West Bengal.

Key-words : Coir, coconut husk, coir board.

1. Introduction

The Coir Industry is one of the most important traditional small scale industries for its contribution to Indian economy and employment generation. Coir is the word coming from Malayalam word Kayar or Kayaru which mean Cord to be twisted. Coir is the fibre extracted from coconut husk. The coconut producing regions are mainly located in the tropics, particularly in South and South-East Asia and in East Africa; such as, Indonesia, Philippines, India, Sri Lanka, Ghana etc. In most of the Countries coconut husk is either used as fuel or discarded as useless materials and in few countries, coir fibre is used to produce different products like, coir yarn, coir mats, carpets, as geo-textiles materials, etc.

This Industry is the largest traditional cottage industry mainly in the coastal region where other alternative avenues of gainful employment are few. This industry is crucially important as a source of employment and income for a million people. Again, this industry plays a vital role in the economic development of the country as a source of foreign exchange and it has earned foreign exchange of Rs. 1476.04 crore during the year 2013-14.

India though holds in the third position in the world for the production of coconuts but is first in production of coir. India shared about 47% of the total coir production of the world during the year 2012. Kerala, Tamil Nadu, Karnataka and Andhra Pradesh are the main coir producing states in India. Besides these states, Goa, Orissa, Andaman Nicobar Island, West Bengal, Gujrat, Maharashtra, Assam, Tripura, Pondicherry etc. also produce small quantities of coir. Kerala is the first largest coir producer whereas Tamil Nadu is holding second position in coir production among the Indian states. Kerala is considered as the home of coir industry.

2. Literature Review

Several studies have been conducted by the academicians and researchers on different aspects in the field of coir products and coir industry. The Coir Board has also published some reports.

Pylee (1975) made a study to examine the problems that has been faced by the coir industry during the year 1974. The study highlighted the main reason as that shortage of coir fibre which is the basic requirement for the industry. The study also focused the need for modernization of this industry through mechanization to up lift the export trends and to reduce the rising cost of production. The study recommended that for modernizing the sector, preference should be given to public sector and workers, cooperatives to be set up and to operate the husk beating machine. The study also emphasized on research and development for improvement of new products and advertisement to promote export and domestic sales.

Shamanarayan (1977) explained the marketing strategies, especially export trade of Coir Board for the development of the coir industry in India. He analysed the role of agencies in the export and problems faced by them, restrictions in foreign trade and its impact on the industry. Prakash (1977) examined the dual price system fixed for export and open for domestic markets and the problems connected with mechanization.

Thomas and Raghavan (1990) in their working paper framed a policy for revitalization of coir industry in Kerala. Their study analysed the overall problems of this industry and its prospects from different aspects. They made some valuable suggestions to overcome such problems and revitalization of this industry.

Fernandez (2003) examined the problems and prospects of coir industry in the context of trade and market. His study concluded that the survival of this industry depends on its adaptability to the fast changing customer preferences and widening choices. It also suggested that whether for domestic or export purposes, this sector have to keep diversity to maintain the quality of products and services high and ensure cost effectiveness.

Sivanesan (2013) analysed the socio-economic conditions, working conditions and problems of workers of coir industries in Kanyakumari District. Vignesh and Sekaran (2014) examined the problems of coir industry in Coimbatore District.

The primary raw material of coir industry is coconut husks. But the shortage of husks and fibre due to fall in production of nuts create a lot of problems to this industry. In West Bengal, only 20% of the total production of nuts, considered for extraction of fibre. The major problem of this industry is the collection of coconut husks from producers and consumers of coconuts in the state. Inadequate modern technologies and machineries makes it difficult for this state to extract husks for processing. Increases in production of natural fibres like jute, sisal, ladies finger are the problems in coir industry. Entry of Chinese plastic fibre in Indian market makes the coir industry more competitive.

3. Objectives of the Study

The objectives of the study are:

i. To give an overview of the coir industry in West Bengal

ii. To examine the problems and prospects of the coir industry in West Bengal.

4. Databases and Research Methodology

Data have been collected from the books, journals, magazines, research articles, bulletins, working papers, newsletters, bulletins, regulation of the Coir Board, MSME Annual Reports, reports of the Coir Board and different websites. The primary data have been collected through a structured questionnaire. A pilot survey has been conducted to frame the questionnaire considering the different views of Officials/Executives of Coir Board in Kolkata and management of coir units. Communication has been made with the officials, executives, management of units of all the 56 registered coir units operating in West Bengal (as per Coir Board Kolkata, 2013-14,) through telephone, e-mail and personal interaction for filling up the questionnaire during the period from March 2013- July 2014.

Out of 56 registered Units, 34 (i.e., 60.71%) units have responded. Internal consistency of questionnaire is tested by using Cronbach's alpha (.627). Data have been analysed by using statistical package. Six hypotheses have been formulated and tested results are shown in analysis section.

5. Coir Industry in West Bengal

West Bengal got fifth position in respect of coconut production in India with 367.50 nuts during 2011-2012. Coconuts are cultivated in almost all the districts of the State, but most of the coir units are located only in 8 districts viz. South 24 Parganas, North 24 Parganas, East Midnapore, West Midnapore, Kolkata, Howrah, Hooghly, Burdwan and Murshidabad. The coir units of the State are very small in size and maximum of them are concentrated in the village areas where there is lack of alternative job opportunity. It is completely an unorganized sector in the state. The workers are mostly from SC/ST, backward classes. This industry has to compete with Jute fibre (as West Bengal is well known for Jute Industry) and other artificial fibres. The State Government in collaboration with Indian Coir Board has taken different initiatives to set up training-cum-servicing centres in South 24-Parganas and Howrah districts where coconut husk are easily available.

The coir industry in West Bengal is mainly concentrated in South 24 Parganas, East-Midnapore, Howrah districts for easy availability of coconut husk and low cost workers. There are 56 registered Coir Units (as per Coir Board, Kolkata) and about 370 (as per MSME, West Bengal) unregistered coir units in West Bengal providing employment to more than 3,000 people in the state. Initially private sectors had started to work in this field in a very much unorganized way and the entire control of this industry was under private sectors. The West Bengal Government has taken different initiatives in collaboration with Indian Coir Board. Uluberia in Howrah district and Dhanchiberia in South 24 Parganas districts have undertaken initiatives to promote coir industries in the State. To modernize this industry, the State Government is running two training centres; one is situated at Uluberia in Howrah district and the other at Dhanchiberia in the cluster region in the district of South 24 Parganas. There are model villages in the state under the 'Model Coir Village Scheme', for implementing welfare programmes like common work-sheds, Common Facility Centre, drinking

water facilities, sanitary latrine for workers. These model villages are situated at Hirapur Gram Panchayat and Bagnan in Howrah district.

6. Analysis of Problems and Findings

The development of Coir Industry in West Bengal is hampered by varied problems. Scarcity of raw materials, unskilled workers, migration of workers, unavailability of adequate finance, lack of proper marketing facilities, absence of modern technology are the common problems for all the coir units of the State. In this context, the study has been attempted to analyse the various problems faced by the registered coir industry in West Bengal. Such problems have been analysed under five (05) broad areas. These areas are Employee related, Raw Material, Marketing, Financial and Products & Technology. Each area contains relevant questions. All together 71 questions have been constructed under these five broad areas to analyse the problems of the coir industry in West Bengal.

6.1 *Employee related problems*

Coir industry is one of the important traditional employment generating small scale industries. It is also a labour intensive industry. Production and the marketing are the main part of this industry. Production section requires a number of workers for retting of husk, fibre extraction from husk, spinning yarn and weaving. The extraction of fibre and spinning can be done manually (retting system) as well as by using machines (de-fibring system). Due to small size and lack of finance in the units of West Bengal, both the works are done manually. Due to this reasons the units of the State require a lot of permanent skilled workers. Yet, most of the units of the State do not get full time permanent workers. Workers are migrating from this industry to other sectors for various reasons. The survey has found several significant problems relating to employments which have been discussed below:

- 64.7% surveyed units believe that unskilled worker is a major concern to the coir units of the state.
- Only 44.1% of the surveyed units are able to arrange training programmes for their employees and 97.1% of which have agreed that production capacity of the workers increases after proper training.
- All the units are very much worried about the migration of workers. The reasons for migration are NREGA Programme or 100 Days Works of Central Government, lack of continuous work in the units throughout the year, less pressure but higher income in alternative jobs.
- Strike is another problem to this industry in the state. Few of the units have closed their units due to strike.

Chi-Square Test

A Chi-Square test has been done to examine the impact of the training programme conducted by the units on its production capacity.

Hypothesis-1

H_0 : The training programme has no impact on increasing production capacity of the units.

H_1 : The training programme has an impact on increasing production capacity of the units. Table 1 and Table 2 show below the results of Chi-square test and cross tabulation of training programme.

Table-1 : Cross Tabulation of training programme for the employees and production capacity of the units

Unit arranges training programme for their employees		Production capacity are increased or not		
		Agree	Neutral	Total
Agree	Total	15	0	15
	% of Total	44.1%	.0%	44.1%
Neutral	Total	0	1	1
	% of Total	.0%	2.9%	2.9%
Disagree	Total	18	0	18
	% of Total	52.9%	.0%	52.9%
Total	Total	33	1	34
	% of Total	97.1%	2.9%	100.0%

(Source : Compiled by Researchers)

Table-2 : Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	34.000	2	.000
Likelihood Ratio	9.023	2	.011
Linear-by-Linear Association	.008	1	.928
No of Valid Cases	34		

(Source : Compiled by Researchers)

Interpretation : The Pearson Chi-Square or P value of the test at 5% level of significance is .000 which is less than 0.05. So, the null hypothesis is rejected and the alternative hypothesis is accepted. Therefore, it can be concluded that the training programme has an impact in increasing production capacity of the units.

From the above cross tabulation table-1, it is also found that 44.1% of the units provide training to their employees whereas 97.1% of the total surveyed units believe that the production capacities have increased from their trained employees.

6.2 *Raw material related problems*

Coir fibre is the prime raw material for this industry and the fibre is extracted from coconut husk. In West Bengal, only 20% of the total coconut productions are available for extraction of fibre and rest of the coconut husk are considered as waste. Local dealers are the main source of raw material to the coir units of the State and few of the coir units purchase raw material from other states. The coir units of the State face numerous problems; like

- 70.6% of the surveyed units have agreed that the quality of raw material available in West Bengal is very poor. Whereas 20.6% respondents have opined that the quality of raw material in West Bengal is very good and 8.8% have remained silent.
- Even the price of raw material is much higher in West Bengal (91.2%) and supply of raw material is very irregular.
- Sometimes productions are hampered due to unavailability of required raw material according to demand (82.4%) and 70.6% of the units reported that they need to buy raw material from other states for continuous production in the units.
- The collection cost of raw material is also rising day by day. Indirectly it increases the cost of coir products.
- 91.2% respondents have agreed that there is a lack of good machineries for collecting coconut husk from the source, like coconut producer, households, and coconut sellers.

Chi-Square Test

A Chi-Square test has been done to verify the degree of necessity to buy raw material from other states to maintain the continuous supply of coir and coir based production in the units.

Hypothesis-2

H_0 : Non-availability of raw material in West Bengal does not lead to purchase of raw material from other states.

H_1 : Non-availability of raw material in West Bengal leads to purchase of raw material from other states.

Table 3 and table 4 show below the results of Chi-square test and cross tabulation of need to buy raw materials from other states.

Table-3 : Cross tabulation of raw materials are not available according to demand in West Bengal and Need to buy Raw Materials from other states

Raw materials are not available according to demand in West Bengal		Need to buy Raw Materials from other states for continuous production			
		Agree	Neutral	Disagree	Total
Agree	Total	22	3	3	28
	% of Total	64.7%	8.8%	8.8%	82.4%
Neutral	Total	1	0	1	2
	% of Total	2.9%	.0%	2.9%	5.9%
Disagree	Total	1	0	3	4
	% of Total	2.9%	.0%	8.8%	11.8%
Total	Total	24	3	7	34
	% of Total	70.6%	8.8%	20.6%	100.0%

(Source : Compiled by Researchers)

Table-4 : Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.112	4	.039
Likelihood Ratio	8.726	4	.068
Linear-by-Linear Association	7.889	1	.005
N of Valid Cases	34		

(Source: Compiled by Researchers)

Interpretation : The Pearson Chi-Square or P value of the test at 5% level of significance is .039 which is less than 0.05. So null hypothesis is rejected and the alternative hypothesis is accepted. Therefore, it can be said that the coir units of West Bengal need to buy raw materials from other states for continuous production due to non-availability of raw material in West Bengal.

The cross tabulation table-3 also shows that 82.4% of the respondents have agreed that the raw material is not available according to demand in West Bengal and 70.6% of the respondents have also agreed that they need to buy raw materials from other states to continue their production in the units. 8.8% respondents agreed that there is no need to buy raw material from other states.

6.3 *Marketing problems*

Marketing is another important aspect to any industry especially to small sector industry like coir. The coir and coir based products have great demand in both domestic as well as in foreign markets. India is a major exporter of coir and coir based products. The domestic markets of coir and coir products are also expanding day by day. Both the markets are dominated by the coir units of Southern India. The coir units of West Bengal are not in a position to get up-to-date information about the market i.e. about the competition, taste-liking-disliking of the consumers and modern design & fashion. Even they are unable to upgrade their products keeping in mind the market requirements. They produce low quality of coir products at higher cost. In this section, marketing related problems of coir based products have been identified and analysed.

- 67.6% of the respondents sell their products in three ways i.e. directly, through private agency and Self Help Groups (SHGs). There is no Cooperative system of marketing of coir products in the state.
- All the respondents agreed that other natural fibres like sisal, jute and entry of artificial fibre have made the market tough for coir and coir products.
- The study has also found that there is huge competition among the coir units in West Bengal as well as in the other states of India (94.1%).
- All the respondents believe that entry of China products is another challenge to this industry.

- 97.1% respondents have agreed that the demand for coir products in West Bengal is increasing but 64.7% of the surveyed units have agreed that this demand cannot be fulfilled by the existing coir units of the state.
- 97.1% of the respondents have responded that they do not get assistance from Government in marketing of their coir products in domestic markets as well as in exporting the coir and coir products.
- The study has also identified that the coir units of the state are forced to sell their products to the middlemen or agents at their price (73.5%).
- Though there is a good scope of exporting coir and coir based products opined by 82.4% respondents but 61.8% respondents agreed that West Bengal is not in good position in exporting of coir and coir based products.

Chi-Square Test

A Chi-Square test has been done to examine whether West Bengal is in a good position in exporting coir and coir based products as there is a huge scope.

Hypothesis-3

H_0 : West Bengal is not in a good position in exporting coir and coir products.

H_1 : West Bengal is in a good position in exporting coir and coir products.

Cross tabulation for export of coir and coir based products and Chi-Square test are shown in table 5 and table 6 below.

Table-5 : Cross tabulation of Huge scope for export of coir and coir based products and West Bengal is in good position in export of coir products

Huge scope for export of coir and coir based products		West Bengal is in good position in export of coir products			
		Agree	Neutral	Disagree	Total
Agree	Total	6	5	17	28
	% of Total	17.6%	14.7%	50.0%	82.4%
Neutral	Total	0	2	3	5
	% of Total	.0%	5.9%	8.8%	14.7%
Disagree	Total	0	0	1	1
	% of Total	.0%	.0%	2.9%	2.9%
Total	Total	6	7	21	34
	% of Total	17.6%	20.6%	61.8%	100.0%

(Source : Compiled by Researchers)

Table-6 : Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.752	4	.600
Likelihood Ratio	3.770	4	.438
Linear-by-Linear Association	.783	1	.376
N of Valid Cases	34		

(Source : Compiled by Researchers)

Interpretation : The Pearson Chi-Square or P value of the test at 5% level of significance is .600 which is more than 0.05. So, the null hypothesis is accepted and alternative hypothesis is rejected. Therefore, the study has found that West Bengal is not in a good position in export though there is huge scope of exporting coir and coir based products. The reason behind this might be poor quality of products and promotional scheme.

From the cross tabulation table-5, it is also found that 82.4% of the respondents have agreed that there is a huge scope of exporting of coir and coir based products but 61.8% of the respondents have disagreed to the fact that West Bengal is in good position in exporting coir products. Only 17.6% respondents have agreed that West Bengal is in good position in exporting coir and coir based products.

6.4 *Financial Problems*

One of the major problems of the coir units of West Bengal is lack of finance, the smaller the unit, the larger the problem of capital fund. They need more money as working capital as well as long term capital to run the units efficiently. Units need to borrow money but due to various legal processes and paper works they are not willing to borrow from Bank. Most of them are not aware about the different financial schemes of the Government and the Coir Board. This analyses such financial related problems of the coir units in West Bengal.

- The coir units of West Bengal are facing shortage of working capital. Only 23.5% respondents said that they have sufficient working capital to run the day-to-day work.
- 97.1% of the respondents units are very much willing to take loan from Bank. But due to legal hazards and paper works of taking loans from Banks 73.5% of the respondents borrow loans from other financial institutions at higher rate of interest.
- The study has found that only 8.8% units spent money for application of modern technology in their units in production process and the rest cannot spend money because of financial constraints.
- All most all the units are very much eager to get financial assistance from the Government and the Coir Board but they do not get such assistance.
- 94.1% of the surveyed units have agreed that the collection cost of coconut husk increases the production cost of coir based products.

6.5 *Production and technological problems*

Modern and upgraded technologies and machineries are very much required to produce qualitative coir products to compete with the coir industry of other states. But the coir units of West Bengal are not well equipped with the modern technology. Most of them manufacture coir products by using old machineries and conventional methods. Even they cannot adopt the modern technology and machinery due to various problems. Coir Industry in the state has become a value added traditional industry which produce a few coir based products like; coir yarn, rope, mattresses etc. The study is meant to find out such problems.

- It is also found that the demand for coir products in West Bengal is increasing day-by-day but the units cannot fulfill that demand with their traditional products only.
- 73.5% of respondents have agreed that it is not possible for them to carry out research and development activities with their products according to the new demand of the customers.
- The study has found that 79.4% of the respondents do not use modern machineries in the units for the production.
- 50% of the surveyed units do not mix-up any artificial fibre with the coir fibre but 41.2% do the same.

7. Conclusion

Coir products have great demand in the domestic markets as well as in foreign markets. But coir industry has some practical problems for which this industry could not develop to its full potential. The foremost problems are unavailability of skilled workers and their migration. Unavailability and poor quality of raw material are the other vital problems of this industry. Lack of awareness of existing market facilities is the drawback of the industry in comparison to coir units in other states. Technology adaptation and upgradation is very much required to sustain this industry in future. Moreover the Government and the Coir Board have tried to boost up this industry in the State.

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BUSINESS STUDIES

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